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Financial Situation Assessment of a Selected Company

Posouzení finanční situace vybrané společnosti

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3. BNO Paribas and its History
4. Financial Analysis of the Company
5. Conclusion

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Declaration of Utilisation of Results from the Bachelor Thesis
List of Annexes
Annexes

References:

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"I hereby declare that I have elaborated the entire thesis including annexes myself."

Ostrava dated 11.05.2018

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Contents

1. Introduction

BNP Paribas is one of the most famous banks in the world, but the financial situation and financial statements may not so well-known as its name. The main objective of this thesis is to introduce the financial situation, get better acknowledge of evolution history and predict the future development of BNP Paribas. In this thesis, financial analysis methods will be used to analyze the financial statements of BNP Paribas and find out the financial situation of the company lying behind the statements, furthermore, the results of financial analysis will be the information to predict the future development of BNP Paribas.

In chapter 2, the basic situation of EU financial markets will be introduced, the information and data provided by Europe Central Bank will be used and show the general situation of EU financial markets. From this, a general understanding of EU financial markets will be formed.

In chapter 3, the brief introduction of BNP Paribas will be made, including the short history and great achievements. This will give us a better acknowledge of BNP Paribas in the society and the history. Also, there will exist some information that can show the developing strategy of BNP Paribas.

Then in chapter 4, financial analysis methods will be introduced first in part A, which will be used to analyze financial situation of BNP Paribas. There are two main parts of it: first part is the introduction of financial statements. The second part is the introduction of financial analysis method. The second part includes four kinds of analysis methods: common-size analysis, financial ratio analysis, DuPont analysis and Influence quantification. The first two analysis needs the data from three financial statements, then calculation can be done with these data and the change of financial situation can be assessed. DuPont analysis and influence quantification aim at the ratios got in financial analysis before, they are the analysis of financial ratios, through which we can know the influence of every ratio on the basic ratio. Then we can know which ratio has the most influence on the basic ratio and the development of the company. Then in part B, three financial statements will

be introduced first and then data and numbers from these financial statements will be used to do financial analysis of BNP Paribas. Generally, I will divide this article into three parts: First, the theory of financial analysis will be introduced, include the introduction of three important financial statement sheets and the theory of financial analysis; Second, the financial statements of BNP Paribas will be presented to show its financial condition; Third, the theory of financial analysis will be used to make the analysis of the financial statements and annual reports from 2012 to 2016 of BNP Paribas. This chapter mainly work on: 1st, analyzing the general financial situation of BNP Paribas using common-size analysis method; 2nd, calculating financial ratios to get better acknowledge of the change of financial statements, common ratios like ROA, ROE and profit margins, specific ratios like loan growth and debt quality will be calculated and presented. These ratios can present the concrete image of BNP Paribas from many respects; 3rd, doing DuPont analysis, breaking down ROE into component ratios to know the influence of every component ratio; 4th, doing influence quantification, getting better acknowledge of influence of component ratios on basic ratio ROE by using gradual change method and logarithmic method. In total, this part mainly working on the analysis of financial data provided by the company.

At last, there will be a review of all the study and all the results in chapter 4 will be listed together to show the general financial situation of the company. From this, the reason why the financial statements are like this can be knew and prediction of the financial situation in future can also be made.

2. Overview of the EU Financial Market

As is generally acknowledged that, financial markets can be divided into three parts: money markets, debt markets and equity markets. In this part, we will have a snapshot on the financial markets in Europe from these three respects.

2.1 Money market

The money market is where financial instruments with high liquidity and very short maturities are traded. It is used by participants as a means for borrowing and lending in the short term, with maturities that usually range from overnight to just under a year. Among the most common money market instruments are Eurodollar deposits, negotiable certificates of deposit (CDs), bankers' acceptances, U.S. Treasury bills, commercial paper, municipal notes, federal funds and repurchase agreements (repos).

Firstly, we will try to do turnover analysis of the cross-market of Europe money markets.

Table 2.1 The cumulative quarterly turnover in euro money market (in millions of euros)

Date	2011	2012	2013	2014	2015
unsecured	9035428.9	4767348.3	3261137.6	4627777.1	2840746.7
secured	29064097	23662353	29768455	32784152	28597842
OISs	9362910.6	5111208	4948038.5	7516968.4	3315140.5
FX swaps	16450221	17104122	15067905	16253885	17097446
other IRSs	9566388.1	8100250.7	9613274.8	7534621.9	8370651.6
Xccy swaps	622020.65	399337.83	313545.55	341118.35	401187.4
FRAs	8749986.2	8884595.3	9343833	8401148.5	7293697.8
ST securities	1301881	870886.45	904077.19	1063325.4	1048075.3

Source: Europe Central Bank

Table 2.1 has listed the value of turnover of many instruments of money markets from 2011 to 2015. In this table, the value of turnover of every kind of financial instruments has been listed.

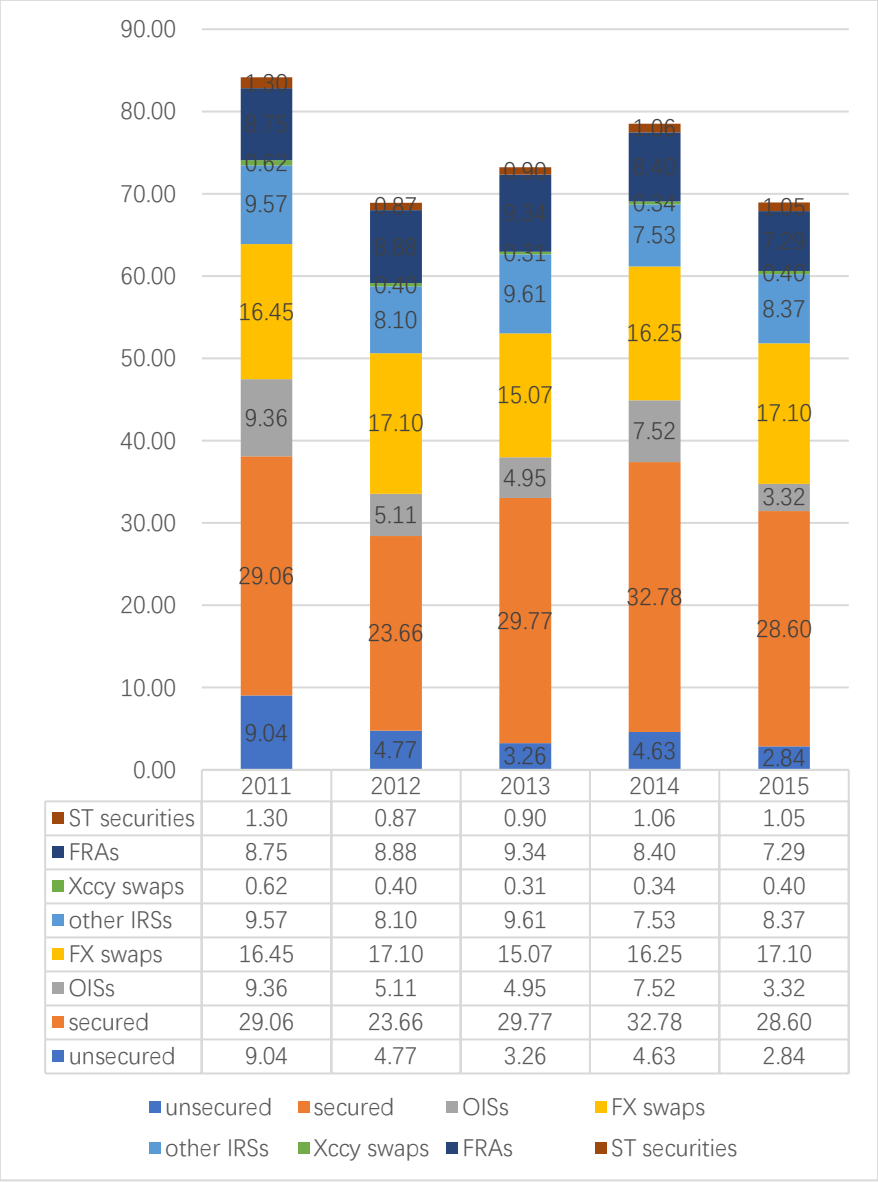
In order to check the horizontal change clearer, we make a new table in trillions of euros.

Table 2.2 Cumulative quarterly turnover in euro money market (in trillions of euros)

	2011	2012	2013	2014	2015
unsecured	9.04	4.77	3.26	4.63	2.84
secured	29.06	23.66	29.77	32.78	28.60
OISs	9.36	5.11	4.95	7.52	3.32
FX swaps	16.45	17.10	15.07	16.25	17.10
other IRSs	9.57	8.10	9.61	7.53	8.37
Xccy swaps	0.62	0.40	0.31	0.34	0.40
FRAs	8.75	8.88	9.34	8.40	7.29
ST securities	1.30	0.87	0.90	1.06	1.05

Then we check the horizontal change using chart 2.1

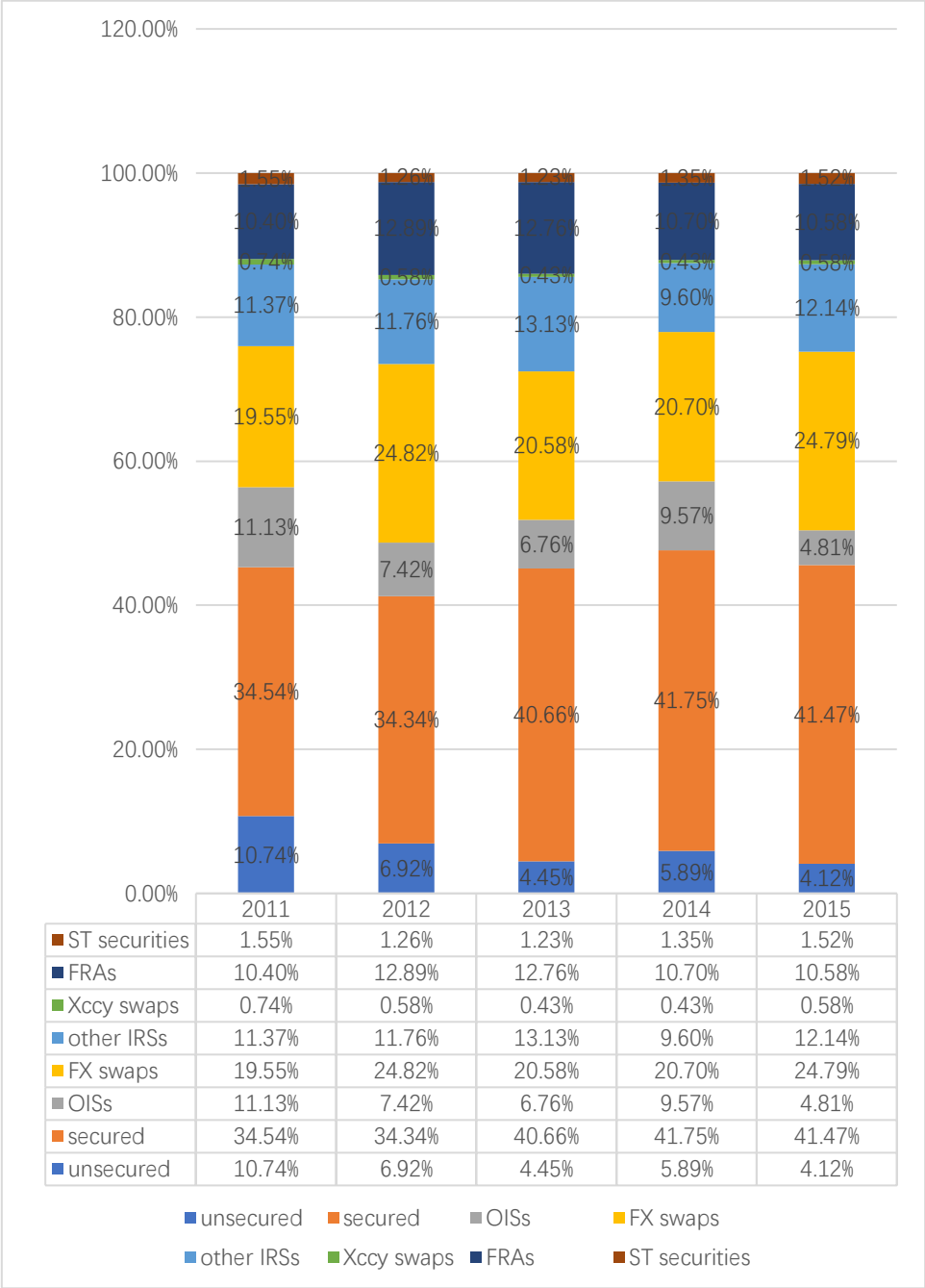
Chart 2.1 Horizontal change of cumulative quarterly turnover in euro money market (in trillions of euros)



Source: Europe Central Bank

Then we can break it down to segments and check the composition.

Chart 2.2 Breakdown, by segment, of cumulative quarterly turnover in the euro money market (percentage of total)



	2011	2012	2013	2014	2015
ST securities	1.55%	1.26%	1.23%	1.35%	1.52%
FRAs	10.40%	12.89%	12.76%	10.70%	10.58%
Xccy swaps	0.74%	0.58%	0.43%	0.43%	0.58%
other IRSs	11.37%	11.76%	13.13%	9.60%	12.14%
FX swaps	19.55%	24.82%	20.58%	20.70%	24.79%
OISs	11.13%	7.42%	6.76%	9.57%	4.81%
secured	34.54%	34.34%	40.66%	41.75%	41.47%
unsecured	10.74%	6.92%	4.45%	5.89%	4.12%

Source: Europe Central Bank

These charts and tables can give us a general view on the Europe money market. The turnover of money markets is decreasing since 2011 except 2014. However, in 2015, it dropped to the lowest level. The structure of money markets instruments changed a lot.

The unsecured and OISs has decreased the most and FX swaps increased the most.

So, in general, the total turnover of money market has decreased a little, but still stable on the whole. The most obvious changes are the increasing of turnover of secured loans and decreasing of turnover of unsecured loans. The turnover of OISs (overnight indexed swaps) had dropped about 60%. Other instruments are stable, so the money market in Europe is healthy and stable.

2.2 Debt Market

The debt market – also called the bond market or credit market – is a financial market in which the participants are provided with the issuance and trading of debt securities. The debt market primarily includes government-issued securities and corporate debt securities, facilitating the transfer of capital from savers to the issuers or organizations requiring capital for government projects, business expansions and ongoing operations.

The amount outstanding of euro-denominated short-term debt securities issued by euro area residents totaled around 13% of GDP at the end of 2012, showing a decline compared with the end of 2011. While the outstanding amount of short-term debt securities issued by non-financial corporations in 2012 remained broadly stable, it declined for MFIs. The outstanding amount of short-term debt issued by the public sector decreased slightly in 2012 compared to the previous year.

Table 2.2 Amounts of outstanding of euro-denominated short-term debt securities issued by euro area residents

(end of year; EUR billions;% of GDP)	1990	1995	2000	2002	2007
Total	475	605	582	700	1120
	11.6%	10.8%	8.6%	9.5%	12.4%
MFIs	104	165.9	244	281	610
	2.6%	3.0%	3.6%	3.8%	6.7%
Non-monetary financial corporations	4	9.6	6	19	52
	0.1%	0.2%	0.1%	0.3%	0.6%
Non-financial corporations	44	33.7	87	75	98
	1.1%	0.6%	1.3%	1.0%	1.1%
Public sector	322	395.9	246	325	361
	7.9%	7.1%	3.6%	4.4%	4.0%

(end of year; EUR billions;% of GDP)	2008	2009	2010	2011	2012
	1454	1429	1344	1376	1260
Total	15.7%	16.0%	14.7%	14.6%	13.3%
	686	573	422	562	454
MFIs	7.4%	6.4%	4.6%	6.0%	4.8%
Non-monetary financial	90	71	106	91	124
corporations	1.0%	0.8%	1.2%	1.0%	1.3%
Non-financial	119	72	64	77	79
corporations	1.3%	0.8%	0.7%	0.8%	0.8%
	559	713	752	645	603
Public sector	6.1%	8.0%	8.2%	6.9%	6.4%

Source: Europe Central Bank

Long-term debt securities accounted for around 142% of GDP at the end of 2012. In this market, the public sector is the most important issuer, followed by the MFI sector and the other issuers of the private sector.

Then the information of long-term debt will be showed below

Table 2.3 Amounts of outstanding of euro-denominated long-term debt securities issued by euro area residents

(end of year; EUR billions;% of GDP)	1990	1995	2000	2002	2007
	2307	4133	5914	6755	9650
Total	56.5%	74.1%	87.1%	92.1%	106.8%
	961	1463	2179	2401	3485
MFIs	23.5%	26.2%	32.1%	32.7%	38.6%
Non-monetary financial	54	86	262	474	1314
corporations	1.3%	1.5%	3.9%	6.5%	14.5%
Non-financial	152	221	280	363	465
corporations	3.7%	4.0%	4.1%	5.0%	5.1%
	1140	2362	3191	3516	4386
Public sector	27.9%	42.3%	47.0%	47.9%	48.6%

(end of year; EUR billions;% of GDP)	2008	2009	2010	2011	2012
	10617	12155	12688	13227	13447
Total	114.9%	136.3%	138.5%	140.4%	141.8%
	3696	3915	3874	4012	4032
MFIs	40.0%	43.9%	42.3%	42.6%	42.5%
Non-monetary	1858	2596	2587	2568	2529
financial corporations	20.1%	29.1%	28.2%	27.3%	26.7%
Non-financial	487	610	641	641	738
corporations	5.3%	6.8%	7.0%	6.8%	7.8%
	4577	5033	5585	6006	6149
Public sector	49.6%	56.4%	61.0%	63.8%	64.8%

Source: Europe Central Bank

2.3 Equity Market

An equity market is a market in which shares are issued and traded, either through exchanges or over-the-counter markets. Also known as the stock market, it is one of the most vital areas of a market economy because it gives companies access to capital and investors a slice of ownership in a company with the potential to realize gains based on its future performance.

Turning to the equity market, a commonly used indicator of its importance is the market capitalization of stocks traded in terms of GDP. This indicator, albeit affected by movements in stock prices, shows that the equity market is less important than the debt securities market in the euro area. Then the table 2.4 is the comparison of equity capitalization of Euro area, United States and Japan.

Table 2.4 Stock market capitalization in the euro area, the United States and Japan

(end of year;% of GDP)	1990	1995	1998	2000	2002
Euro area	20	27	63	86	50
United States	54	93	144	153	104
Japan	96	67	63	68	53

(end of year;% of GDP)	2007	2008	2011	2012
Euro area	84	38	42	52
United States	142	82	104	119
Japan	99	64	57	58

Source: World Federation of Exchanges and Europe Central Bank calculations.

From this table shows that the equity capitalization of three countries had increased a lot since 1990, but from 2007, it all decreased a lot cause the influence of Financial Crisis at that time. As for Europe, this index is always lower than the other countries. However, the gap is closing as time goes by, which means that the capitalization of Europe is developing better and better.

3. BNP Paribas and its History

3.1 General Overview

BNP Paribas is one of the most famous global bank and financial service institution. It was commented as one of the top four banks in the world. Its business has expanded in more than 85 countries in the world and plays important roles in corporate and investment banking, asset management and service and retail banking.

BNP Paribas was formed through the merger of Banque National de Paris (BNP) and Paribas in May 2000, ranking the first in France according to net income, the fourth biggest bank in Europe according to shareholder's equity. Its market value of capital ranked the second among the banks in Eurozone. By the end of 1999, the amount of asset of BNP Paribas was 699 billion euros and net income was 1.5 billion euros. It has employees over 77000, 28000 of who were working in foreign land.

BNP Paribas owns great international business net which covers about 83 countries, including 7 major financial centers. BNP Paribas has the real innovation ability in finance and rich experience in new technology and sale. BNP Paribas has become a truly international bank by developing the kind of its financial business, making great success in corporate banking, capital market, international private bank and asset management. It has the absolute advantage in providing service in France, especially in asset management, consumer credit, rent and real estate

As one of the largest banks in the world, BNP Paribas serves more than 30 million customers between its retail banking networks in its four domestic markets, France, Belgium, Italy and Luxembourg. Its Corporate & Institutional Banking and International Financial Services businesses for corporate and institutional clients are leaders in Europe, significant players in the Americas and growing strongly in the Asia-Pacific region. BNP Paribas has the highest brand value in France, whose brand value increased EUR590 million to reach EUR14.7 billion in 2015. BNP Paribas was the leading bank in the Euro zone in 2017 (2nd in Europe) and ranked 8th internationally.

3.2 Governance and Compliance

3.2.1 Board of Directors

The Board of Directors represents all shareholders and makes decisions concerning the company's strategic direction. It exercises three general powers:

a) Examining the company's strategic choices
b) Contributing to good governance throughout the company
c) Monitoring and assessing all operations related to the Group's businesses

3.2.2 The general management and the Executive Committee

The General Management of BNP Paribas is composed of a Chief Executive Officer (CEO) plus one Chief Operating Officer (COO) and four Deputy Chief Operating Officers. The Executive Committee brings together the General Management as well as 12 other members - Heads of core businesses and central functions. They meet at least once a week.

3.2.3 Compliance

One of the main tasks of Compliance is to help ensure that BNP Paribas remains a trustworthy Bank, not only by complying with laws and regulations, but also by complying with the spirit of laws and regulations.

The Compliance function is evolving. Regulatory, geopolitical and societal changes place Compliance more and more at the crossroads of the strategy and everyday action of the bank and its customers.

Compliance also has to ensure the security of the Group, its business lines and territories, which implies adapting to the growing demands of regulators, customers and public opinion.

Know Your Client (KYC): The KYC Domain defines the Group policies related to client knowledge (identification, information and documentation, risk assessment, acceptance process) and monitors their enforcement. It assists the Business Lines in the

policies implementation and operational efficiency. It also defines the generic control plan and key metrics related to the KYC process.

Financial Security: The “Group Financial Security” (GFS) domain is a department divided into two teams, one located in Paris and the other in NYC. GFS Paris is primarily responsible for the prevention of money laundering and the fight against corruption and terrorist financing, while the main role of GFS U.S. is to supervise and coordinate the Group’s efforts to comply with U.S. and other international sanctions and embargoes.

Protection of Interests of Clients (PIC): The mission of the « Protection of Interests of Clients » (PIC) domain is to make sure that BNP Paribas clients:

- are offered products and services that truly meet their needs
- are provided with clear and accurate information on product features, costs and risks.

In that purpose, the PIC domain is ensuring Compliance with complex and changing local regulations designed to protect the clients’ interests:

- throughout the duration of its relationship with the clients,
- throughout the life cycle of all products and services that BNP Paribas develops or sells.

PIC Compliance Officers work therefore with business lines to help them reinforce the primacy of clients' interests in their practices.

Market Integrity: The “Market Integrity” domain is committed to ensure the Group activities compliance with:

- the rules applicable to: circulation of confidential and privileged information and prevention of insider trading, operations on financial instruments, pre and post market transparency rules, prevention and detection of market abuse, detection and management of conflict-of-interest situation.
- the rules governing the organization and rules of conduct applicable to the Group as a producer of financial services and instruments.

3.3 Short history

BNP Paribas was formed through the merger of Banque National de Paris (BNP) and Paribas (see below for name origin) in 2000. The company is a component of the Euro Stoxx 50 stock market index.

After the end of the Second World War, the French state decided to "put banks and credit to work for national reconstruction". René Pleven, then Minister of Finance, launched a massive reorganization of the banking industry. A law passed on 2 December 1945 and which went into effect on 1 January 1946 nationalized the four leading French retail banks: BNCI and CNEP, Crédit Lyonnais, and Société Générale.

In 1966, the French government decided to merge CNEP with BNCI to create one new bank called Banque National de Paris (BNP).

The bank was re-privatized in 1993 under the leadership of Michel Pébereau as part of a second Chirac government's privatization policy.

The bank was nationalized in 1982 by the government of Pierre Mauroy under François Mitterrand as part of a law that nationalized five major industrial companies, thirty-nine registered banks, and two financial companies, Suez and Paribas. It was re-privatized in January 1987 by the Chirac government.

In 1999, BNP and Société Générale fought a complex battle on the stock market, with Société Générale bidding for Paribas and BNP bidding for Société Générale and counter-bidding for Paribas. BNP's bid for Société Générale failed, while its bid for Paribas succeeded leading to a merger of BNP and Paribas one year later on 22 May 2000.

On 9 August 2007, BNP Paribas became the first major financial group to acknowledge the impact of the sub-prime crisis by closing two funds exposed to it. This day is now generally seen as the start of the credit crisis and the bank's quick reaction saved it from the fate of other large European banks such as UBS

On 6 October 2008, BNP took over 75% of troubled bank Fortis' activities in Belgium, and 66% in Luxembourg, in exchange for the Belgian government becoming the new group's major shareholder. The sales of the Fortis shares were suspended by a court

order from the Court of Appeal on Friday 12 December on 14 December 2008, BNP announced it could lose €350 million as a victim of the Madoff fraud.

In the end of January, the Belgian government and BNP negotiated for a 75% partnership in Fortis Bank Belgium. Fortis Insurance Belgium would be reintegrated in Fortis Holding.

On 11 February, Fortis' shareholders decided that Fortis Bank Belgium and Fortis Insurance Belgium should not become property of BNP Paribas. However, the acquisition was completed, and BNP Paribas took 75% shareholding and renamed the new subsidiary BNP Paribas Fortis. After this only Fortis Insurance International was left in Fortis Holding and this was renamed as Ageas, a business that had Insurance all over Europe and Asia. The remaining Fortis Bank Netherlands was in the hands of the Dutch Government which merged it with other ABN AMRO holdings it already owned under the name ABN AMRO. In May 2009, BNP Paribas became the majority shareholder (65.96%) of BGL (formerly Fortis Bank Luxembourg), the State of Luxembourg retaining 34% making BNP the eurozone's largest bank by deposits held.

On 21 September, the bank's registered name was changed to BGL BNP Paribas and in February 2010, BGL BNP Paribas became the 100% owner of BNP Paribas Luxembourg. The transfer was finalized on 1 October 2010 with the incorporation of BNP Paribas Luxembourg's business in the operational platforms of BGL BNP Paribas. In 2013 BNP Paribas was awarded the Bank of the Year award by The International Financing Review ("IFR"), Thomson Reuters' leading financial industry publication. The IFR awards are a key industry benchmark and Bank of the Year is the top honor awarded.

BNP Paribas reached an agreement in December 2013 to acquire Rabobank's Polish unit BGZ Bank for around $1.4 billion. In September 2014, BNP completed the purchase of BGZ Bank for a final fee stated in the media to be $1.3 billion.

In June 2014, BNP Paribas pleaded guilty to falsifying business records and conspiracy, having violated U.S. sanctions against Cuba, Iran, and Sudan. It agreed to pay an $8.9 billion fine, the largest ever for violating U.S. sanctions at that time.

3.4 Business unit

3.4.1 Retail banking

In 2015, the BNP Paribas Group was organized around two business areas: Retail Banking & Services, a global network of nearly 7,000 branches, comprising Domestic Markets and International Financial Services, and Corporate & Institutional Banking (CIB).

At the end of 2015, outstanding deposits stood at EUR700.3 billion and outstanding loans at EUR682.5 billion. The geographic breakdown of revenues was as follows: Europe (73.3%), Americas (11.8%), Asia Pacific (7.5%) and others (7.4%).

Retail banking is BNP Paribas' largest business unit representing 72% of its 2015 revenues. Its operations are concentrated in Europe, especially in the group's three domestic markets of France, Italy (where it operates as Banca Nazionale del Lavoro (BNL)), and Belgium (as BNP Paribas Fortis). The group also owns an American subsidiary BancWest which operates as Bank of the West in the western United States and First Hawaiian Bank in Hawaii. BNP Paribas's Europe Mediterranean group also runs large retail banks in Poland, Turkey, Ukraine, and northern Africa.

BNP Paribas is the largest bank in the Eurozone by total assets and second largest by market capitalization according to The Banker magazine, just behind Banco Santander. It employs over 189,000 people, according to the bank as of 31 December 2015, of which 147,000 is working in Europe, and maintains a presence in 75 countries.

3.4.2 Domestic market

In France: BNP Paribas runs one of France's largest retail banking networks with 2,200 branches and over 3,200 ATMs. In Paris the bank has 187 agencies. BNP Paribas serves over 6 million French households and 60,000 corporate customers. In 2009 The French Retail Banking unit (FRB) had revenues of €6.1 billion (15.2% of total group's), income of €1.5 billion (15% of total group's) and employs 31,000 people (15.4% of total group's workforce).

In Italy: In 2006 BNP Paribas purchased Banca Nazionale del Lavoro (BNL), Italy's sixth largest bank at the time. In 2009 BNL had 810 branches in Italy, 2.5 million individual clients, and over 150,000 corporate clients. It grossed €2.9 billion in revenue (7.2% of the total group's) and €540 million of net income (9.3% of the total group's), and around 13,000 employees (6.5% of the total group's).

In Belgium: BNP Paribas acquired BNP Paribas Fortis when it acquired the retail banking assets of the Belgian lender Fortis in 2009. This deal also included Fortis's subsidiaries in Poland and Turkey, now grouped in the "Europe Mediterranean" division.

3.4.3 Emerging market

In 2009, BNP Paribas reorganized its retail banking divisions renaming its "Emerging Markets" group the "Europe Mediterranean" group. This change was made because after the integration of Fortis Bank's Polish and Turkish subsidiaries, BNP Paribas's emerging market activities are now heavily concentrated in Eastern Europe and the southern half of the Mediterranean basin.

BNP Paribas is a member of the Global ATM Alliance, a joint venture of several major international banks that allows customers of the banks to use their ATM card or check card at another bank within the Global ATM Alliance with no ATM surcharges when traveling internationally. Other participating banks are Barclays (United Kingdom), Bank of America (United States), China Construction Bank (China), Deutsche Bank (Germany), Santander Serfin (Mexico), UkrSibbank (Ukraine), Scotiabank (Canada) and Westpac (Australia and New Zealand).

3.4.4 Corporate and international banking

BNP Paribas is also a leading global investment bank through its Corporate & Institutional Banking unit. Although present in all investment banking markets, it is recognized as a global leader in derivatives trading, structured finance, and project finance. BNP Paribas has 6 key business areas:

a) Fixed Income: BNP Paribas' fixed income team helps companies hedge their

exposure to foreign exchange, interest rate, and credit risks, primarily though the structuring and sale of derivative products such as interest rate and foreign exchange swaps, foreign exchange options and credit derivatives. It also trades in these markets on behalf of clients or for its own proprietary account. On an average day, a quarter of a trillion dollars in fixed income instruments are traded at BNP Paribas Americas' fixed income trading floor located just blocks from the NASDAQ Market Site in Manhattan, New York City.

b) Equity & Derivatives: BNP Paribas' Equity & Derivatives team helps companies manage their risks and investment portfolios with equity derivatives such as options, futures, and swaps, as well as highly complex, customized solutions such as structured products. It also trades in these markets on behalf of clients or for its own proprietary account.

c) Commodity Derivatives: BNP Paribas' Commodity Derivatives team helps clients hedge their exposure to commodity risk though the structuring and sale of commodity futures and OTC commodity swaps. It also trades in these markets on behalf of its clients or proprietary account.

d) Investment Banking: BNP Paribas' Corporate Finance team performs most of the traditional investment banking functions of the group including mergers and acquisitions advisory, and equity raising operations such as Initial Public Offerings (IPOs), rights issues, and convertible bond issues.

e) Structured Finance: BNP Paribas' Structured Finance group offers clients project finance solutions, export financing, syndicated loans, and financing for acquisitions and leveraged buyouts.

f) Corporate & Transaction Group: BNP Paribas' Corporate and Transaction group offers clients simplified flow banking services including trade finance, international cash management, and basic hedging solutions.

In 2009, BNP CIB earned €12.2 billion in revenue (30% of total group's), €4.4 billion in pre-tax income (48.9% of total group's), and 18,000 employees (9.0% of total group's headcount.)

3.4.5 Investment solutions

BNP Paribas's "Investment Solutions" unit includes its asset management, custodial banking, real estate, insurance, online brokerage, "Personal Investors" and wealth management activities.

On 11 June 2008, BNP Paribas formally signed an agreement to purchase the Prime Brokerage Services division of Bank of America Securities. The sale was expected to be completed by the end of the 2008 third quarter.

Asset Management: The asset management activities of BNP Paribas are grouped under BNP Paribas Investment Partners.

In 2009 BNP Paribas IP had 2,400 employees in more than 70 countries and US $395.1 billion in assets under management (AuM) in 2014 according to the Scorpio Partnership, an increase of 11% over 2013.

4. Financial Analysis of the Company

A) Financial analysis theory

In part A, the theory of financial analysis will be introduced first.

4.1 Financial statements

In this part, I will introduce basic information about balance sheet, income statement and cash flow statement. These three basic financial statements summarizing information about a company, which can help us understand the financial condition of the company.

4.1.1 Balance sheet

The balance sheet includes the information about the assets of the company, the asset' value and shows how these assets are financed by the company, which is also known as the liabilities and the shareholder's equities. These three components can be computed like this: Assets = Liabilities + Shareholders' equity. While assets are what the companies owns, the liabilities are what the company owes, the shareholder's equity is the part which assets exceed liabilities and will be distributed between the owners of the company.

In general, asset can be created by purchase (investing activities), business activities (operating activities) and financing activities. Generally, assets include fixed assets (long-term assets, non-current assets, like the buildings, machinery, land and equipment) and current assets (short-term assets, like the cash, inventory, goods and receivables), divided by the liquidity of the asset.

Equity is what the investors' investment into the company. It is the contribution of the owners of the company by buying shares and the company's profit which is called retained earnings. So, we can also divide the equity into three parts: common and preferred stock, share premium and retained earnings.

Liability is also known as debt, which represents the money which is borrowed

and must be paid back in a certain period. Liability can also be called the capital or investment from creditors. According to the time when the debt or liability must be paid back, the liability can be divided into short-term liabilities (the borrowed money that must be paid back within 12 months, like accounts payables, accrued expenses and short-term notes) and long-term liabilities (the money borrowed longer than 12 months, such as bank loan and the issuing of bonds).

4.1.2 Income statement

The income statement is also known as profit/loss statement or P/L statement, which can provide the information about the revenue and cost of the company, so these data can be used to compute the result of the company's profit or loss. The formula is: Revenue – Cost = Profit/loss. Revenue is the amount that charged for the delivery of goods and services during the ordinary activity of the companies, while the cost is the amount that must be spent during the company's ordinary activity. However, the revenue for banks is a little bit different because the revenue mainly come from its financial activities, from interest, commission and financial instruments. Also, the costs of banks come from interest payment, financial instruments or other things connected with the activities of banks.

4.1.3 Cash flow statement

This statement can show us the source of the company's cash and the usage of these cash flow, generally it shows the inflow and outflow of the cash within one year. To know the Net Cash Flow within one year, the formula Net Cash Flow = Sum of Cash inflow – Sum of Cash outflow should be used to calculate. According to the result of the calculation, we can know whether the company has made more cash inflow or cash out flow (but it can't show whether the company has made profit). If we want to know the cash in the end, we need to use the formula: Cash at the end = Cash at the beginning +/- Net cash flow. What should be stressed is that the income statement is calculated in accrual basis (revenues and costs are recorded

when they are earned or incurred no matter the company has got the money or not) compared with the accounting basis.

4.2 Financial analysis methodologies

Financial analysis is the process of selecting, evaluating and interpreting financial data which we can find from the balance sheet, P/L statement and income statement. Also, the market data like security price and industry statistics are needed.

Generally, there are four kinds of methodologies which are usually used: Common-size analysis, financial ratio analysis, DuPont analysis and influence quantification. These methodologies will be introduced below.

4.2.1 Common-size analysis

A common-size financial analysis displays line items as a percentage of one selected or common figure. Creating common-size financial statements makes it easier to analyze a company over time and compare it with its peers (in this thesis, we mainly compare with the company itself). Using common-size financial statements helps us know the change of financial condition of BNP Paribas.

There are two types of common-size analysis include horizontal and vertical common-size analysis: horizontal common-size analysis is the analysis aimed at the evolution of the financial statements data over the time or their changes compared with a given bench mark, so that we can know the change of the company's financial structure in the given period. For example, we can choose the data of a certain year as a base year and then calculate all the data of subsequent years relative to that base year. Vertical common-size analysis pays major attention on the changes in the proportion of selected statement data, which means financial structure and information in a point time can be analyzed. For different financial statements, there are also different benchmarks. For the income statement, the benchmark is the revenue, while for the balance sheet, the bench mark is total assets.

4.2.2 Specific Ratios for Banks

Considering the characteristic of banking, some ratios which are designed for financial analysis of banks will be introduced first.

As banks have very different operating structures than regular industrial companies, it stands to reason that investors have a different set of fundamental factors to consider, when evaluating banks. This is not meant as an exhaustive or complete list of the financial details an investor needs to consider, when contemplating a bank investment.

A) Loan Growth

For many banks, loan growth is as important as revenue growth to most industrial companies. However, the quality of these loan and credit quality of the debt owner can’t be known by the investors. Also, this ratio is not absolutely better when the number goes up. Above-average loan growth can mean that the bank has targeted attractive new markets, or a low-cost capital base that allows it to charge less for its loans. On the other hand, above average loan growth can also mean that a bank is pricing its money more cheaply, loosening its credit standards or somehow encouraging borrowers to move over their business.

B) Deposit Growth

Deposits are the fundamental money and capital of banks and also, deposits are the most common, and almost always the cheapest, source of loanable funds for banks. Accordingly, deposit growth gives investors a sense of how much lending a bank can do. There are some important factors to consider with this number. First, the cost of those funds is important; a bank that grows its deposits by offering more generous rates, is not in the same competitive position as a bank that can produce the same deposit growth at lower rates. Also, deposit growth has to be analyzed in the context of loan growth and the bank management's plans for loan growth.

C) Loan/Deposit Ratio

The loan/deposit ratio helps assess a bank's liquidity, and by extension, the aggressiveness of the bank's management. If the loan/deposit ratio is too high, the

bank could be vulnerable to any sudden adverse changes in its deposit base. Conversely, if the loan/deposit ratio is too low, the bank is holding on to unproductive capital and earning less than it should.

D) Credit Quality

The importance of credit quality ratios is somewhat self-explanatory. If a bank's credit quality is in decline because of non-performing loans and assets and/or charge-offs increases, the bank's earnings and capital may be at risk. A non-performing loan is a loan where payments of interest or principal are overdue by 90 days or more, and it is typically presented as a percentage of outstanding loans. Net charge-offs represent the difference in loans that are written off as unlikely to be recovered (gross charge-offs) and any recoveries in previously written-off loans.

4.2.3 Profitability Indicator Ratio

A business exists to add value. The most important thing for a corporation is making profit, the same for banks. Profit is also one important factor that investors will consider about.

But what exactly is profit? The definition in economics textbooks is revenues minus expenses. That definition – the accounting definition – is true, and it is useful for per-unit analysis and capital budgeting. But for an investor, that definition alone doesn’t capture the full economic value added by the company.

In the sections that follow, different kinds of methods that assess the profitability of the company will be introduced, which includes different profit margins, ROA, ROE and ROCE.

A) Profit margin analysis

There are four levels of profit or profit margins: gross profit, operating profit, pre-tax profit and net profit. Conceptually, the income statement assumes the following sequence: A company takes in sales revenue, then pays direct costs of the product of service, for banks is the process which get income from financial activities and have expenses from financial activities. What’s left is gross margin. Then it pays

operating expenses and other expenses like depreciation, amortization and impairment of property, plant and equipment and intangible assets. What's left is operating margin. Then it pays share of earnings of associates, net gain on non-current assets and costs of risk with pre-tax margin left over. Then it pays taxes, leaving net margin, also known as net income, which is the very bottom line.

Semantically, "profit," "income," and "margin," are all used interchangeably, although margin usually refers to a percentage, whereas profit and income exclusively denote monetary amounts. When talking about profitability analysis, percentages are more frequently used than raw numbers because they enable comparison among companies and across a company's own time horizon. The main four profit margins will be used is presented below:

The major margins:

$$\text{Gross Profit Margin} = \frac{\text{Gross Profit}}{\text{Net Sales (Revenue)}}$$

$$\text{Operating Profit Margin} = \frac{\text{Operating Profit}}{\text{Net Sales (Revenue)}}$$

$$\text{Pretax Profit Margin} = \frac{\text{Pretax Profit}}{\text{Net Sales (Revenue)}}$$

$$\text{Net Profit Margin} = \frac{\text{Net Income}}{\text{Net Sales (Revenue)}} \qquad (4.2.1)$$

B) Return on Assets

Return on Assets (ROA) is the simplest of such corporate bang-for-the-buck measures which means that you can know if the company is making profit. The formula to calculate the ROA:

$$\text{ROA} = \frac{\text{Net Income}}{\text{Average Total Assets}} \qquad (4.2.2)$$

Higher ROA indicates more asset efficiency, which means the ability to get revenue with the same assets is better.

This ROA formula is most suitable for banks because Banks have different accounting. For example, bank balance sheets better represent the real value of their assets and liabilities because they're carried at market value (via mark-to-market accounting), or at least an estimate of market value, versus historical cost. Also, for normal companies, debt is investment capital added to a business – capital on which

a return is paid to debt investors – for banks, debt is conceptually a fuzzy blend of invested capital and "inventory" from which bank products are created.

C) Return on Equity

ROE is a true bottom-line profitability metric, comparing the profit available to shareholders to the capital provided or owned by shareholders. In a conceptual sense, it's the profitability measure that equity investors care most about: ROE compares the income available to just equity investors to the capital owned (and put to work) by just equity investors. The formula:

$$\text{ROE} = \frac{\text{Net Income}}{\text{Average Shareholders'Equity}} \qquad (4.2.3)$$

In addition, *the average for return on equity (ROE) for companies in the banking industry in the first half of 2017 was about 9.75%. ----J.BMaverick What Level of Return of Equity is Common for Bank?*

D) Return on Capital Employed

The return on capital employed (ROCE) ratio, expressed as a percentage, complements the return on equity (ROE) ratio by adding a company's debt liabilities, or funded debt, to equity to reflect a company's total "capital employed". This measure narrows the focus to gain a better understanding of a company's ability to generate returns from its available capital base.

By comparing Earnings Before Interest and Tax (EBIT) or net operating profit to the sum of a company's debt and equity capital, investors can get a clear picture of how the use of leverage impacts a company's profitability. Financial analysts consider the ROCE measurement to be a more comprehensive profitability indicator because it gauges management's ability to generate earnings from a company's total pool of capital. The formula:

$$\text{ROCE} = \frac{\text{EBIT}}{\text{Capital Employed}} \qquad (4.2.4)$$

In this formula, the capital employed is calculated like this:

$$\text{Capital Employed} = \text{Average Debt Liability} + \text{Average Shareholders' Equity}$$

4.2.4 Debt Ratio

In the business world, debt is the amount that a business owes creditors. The most common forms of corporate debt are loans from banks and other lenders, as well as corporate or government bonds.

Debt is part of the liability section of a corporate balance sheet. Creditors have a claim on the company's debt. Liabilities are obligations of the company, so failure to make good on these obligations could result in bankruptcy.

In the case of bank, the debt mainly consists of the debt due to central bank, due to customers, due to institutions, debt securities and the loss of financial instruments.

In this part, debt ratio, debt-equity ratio and interest coverage ratio will be introduced.

A) Debt Ratio

The debt ratio compares a company's total debt to its total assets. This provides creditors and investors with a general idea as to the amount of leverage being used by a company. The lower the percentage, the less leverage a company is using and the stronger its equity position. In general, the higher the ratio, the more risk that company is considered to have taken on. The debt ratio is calculated as follows:

$$\text{Debt Ratio} = \frac{\text{Total Liabilities}}{\text{Total Assets}} \qquad (4.2.5)$$

The debt ratio tells us the degree of leverage used by the company. If a company has a high debt ratio (the definition of high will vary by industry, banking is the business which has really high leverage) this is an indication that the company must commit a significant portion of its ongoing cash flow to the payment of principal and interest on this debt. On the other hand, a company that employs very little debt, especially if this is low compared to other companies in the same industry, may not be properly using leverage that might increase its level of profitability.

B) Debt-Equity Ratio

The debt-equity ratio is another leverage ratio that compares a company's total liabilities to its total shareholders' equity. This is a measurement of the percentage of the company's balance sheet that is financed by suppliers, lenders, creditors and

obligors versus what the shareholders have committed.

The debt to equity ratio provides another vantage point on a company's leverage position, in that it compares total liabilities to shareholders' equity as opposed to total assets in the debt ratio. Just like the debt ratio, a lower percentage means that a company is using less leverage and has a stronger equity position. The debt-equity ratio is calculated as:

$$\text{Debt-Equity Ratio} = \frac{\text{Total Liabilities}}{\text{Shareholders'Equity}} \qquad (4.2.6)$$

The banking industry is an area with typically high levels of debt to equity. They use borrowed money to make loans at higher rates of interest than they are paying for the funds they borrow. This is one of the ways they make a profit.

A relatively high debt-equity ratio commonly indicates an aggressive growth strategy by a company. For investors, this means potential increased profits with a correspondingly increased risk of loss. If the extra debt that the company takes on enables it to increase net profits by an amount greater than the interest cost of the additional debt, then the company should deliver a higher return on equity to investors. However, if the interest cost of the extra debt does not lead to a significant increase in revenues, the additional debt burden reduces the company's profitability. In a worst-case scenario, it could overwhelm the company financially, resulting in insolvency and eventual bankruptcy.

The average debt-to-equity ratio for retail and commercial U.S. banks, as of January 2015, is approximately 2.2. For investment banks, the average debt/equity is higher, about 3.1. ----------J.B.Maverick What Debt-equity Ratio is Common for A Bank?

On the other hand, companies employing too little leverage may be earning less than their competitors as a result.

C) Interest Coverage Ratio

The interest coverage ratio is used to determine how easily a company can pay their interest expenses on outstanding debt.

$$\text{Interest coverage ratio} = \frac{\text{Earning before interest and tax (EBIT)}}{\text{Interest expense}} \qquad (4.2.7)$$

The lower the ratio, the more the company is burdened by debt expense. When a company's interest coverage ratio is only 1.5 or lower, its ability to meet interest expenses may be questionable. Because interest expense is generally huge for banks, so this ratio for bank may be lower than the level of other industries.

The ratio measures how many times over a company could pay its outstanding debts using its earnings. This can be thought of as a margin of safety for the company's creditors should the company run into financial difficulty down the road.

The ability to service its debt obligations is a key factor in determining a company's solvency and is an important statistic for shareholders and prospective investors.

Investors want to be sure that a company they are considering investing in can pay its bills, including its interest expense. They don't want the company's growth derailed by these types of financial issues.

Creditors are concerned with the company's ability to make their interest payments as well. If they are struggling to make the interest payments on their current debt obligations, it doesn't make any sense for a prospective credit to extend them additional credit.

4.2.5 Operating Performance Ratio

Operating performance ratios are tools which measure the function of certain core operations for an organization or business. Particularly, these ratios reveal information about how efficiently that organization is using resources to generate sales and cash. A company with strong performance ratios is able to utilize a minimum resource pool to generate high levels of revenues, as well as a significant cash inflow. For banks, this ratio is also important measurement of the operating level, and investors can know whether the bank is operating properly.

A) Fixed Assets Turnover

The formula for fixed assets turnover is as follows:

$$\text{Fixed Assets Turnover Ratio} = \frac{\text{Revenue}}{\text{PP\&E}} \qquad (4.2.8)$$

PP&E represents the property, plant and equipment in fixed assets. Fixed-asset turnover is a ratio which aims to measure how productive a company's fixed assets are when it comes to generating sales. The higher that the yearly turnover rate on these assets is, the better the company is at managing them and using them to generate sales. Considering the specifics of banks, this ratio may not be so important because the investment on fixed asset will be much lower than the investments on financial instruments.

4.2.6 Cash Flow Indicator Ratio

As is widely acknowledged that companies that appear very profitable can actually be at a financial risk if they are generating little cash from these profits. For example, if a company makes a ton of sales on credit, they will look profitable but haven't actually received cash for the sales, which can hurt their financial health since they have obligations to pay.

The ratios in this section use cash flow compared to other company metrics to determine how much cash they are generating from their sales, the amount of cash they are generating free and clear, and the amount of cash they have to cover obligations. We will look at the operating cash flow/sales ratio, free cash flow/operating cash flow ratio and cash flow coverage ratios.

A) Operating Cash Flow/ Sale ratio

This ratio, which is expressed as a percentage, compares a company's operating cash flow to its net sales or revenues, which gives investors an idea of the company's ability to turn sales into cash.

It would be worrisome to see a company's sales or revenues grow without a parallel growth in operating cash flow. Positive and negative changes in a company's terms of sale and/or the collection experience of its accounts receivable will show up in this indicator. The Formula is:

$$\text{OCF/Sale Ratio} = \frac{\text{Operating Cash Flow}}{\text{Net Sales (Revenue)}} \qquad (4.2.9)$$

B) Cash Flow Coverage Ratio

This ratio measures the ability of the company's operating cash flow to meet its obligations - including its liabilities or ongoing concern costs.

The operating cash flow is simply the amount of cash generated by the company from its main operations, which are used to keep the business funded.

The larger the operating cash flow coverage for these items, the greater the company's ability to meet its obligations, along with giving the company more cash flow to expand its business, withstand hard times, and not be burdened by debt servicing and the restrictions typically included in credit agreements. The formula:

$$\text{Short-term Debt Coverage} = \frac{\text{Operating Cash Flow}}{\text{Short-term Debt}}$$

$$\text{Capital Expenditure Coverage} = \frac{\text{Operating Cash Flow}}{\text{Capital Expenditure}}$$

$$\text{Dividend Coverage} = \frac{\text{Operating Cash Flow}}{\text{Cash Dividends}} \qquad (4.2.10)$$

C) Dividend Payout Ratio

This ratio identifies the percentage of earnings (net income) per common share allocated to paying cash dividends to shareholders. The dividend payout ratio is an indicator of how well earnings support the dividend payment.

Here's how dividends "start" and "end." During a fiscal year quarter, a company's board of directors declares a dividend. This event triggers the posting of a current liability for "dividends payable." At the end of the quarter, net income is credited to a company's retained earnings, and assuming there's sufficient cash on hand and/or from current operating cash flow, the dividend is paid out. This reduces cash, and the dividends payable liability is eliminated.

The payment of a cash dividend is recorded in the statement of cash flows under the "financing activities" section. The Formula is:

$$\text{Dividend Payout Ratio} = \frac{\text{Dividends per Common Share}}{\text{Earnings per Share}} \qquad (4.2.11)$$

4.2.7 Dupont Analysis

DuPont analysis is a method of performance measurement that was started by the DuPont Corporation in the 1920s. With this method, assets are measured at their

gross book value rather than at net book value to produce a higher return on equity (ROE). It is also known as DuPont identity.

According to DuPont analysis, ROE is affected by three things: operating efficiency, which is measured by profit margin; asset use efficiency, which is measured by total asset turnover; and financial leverage, which is measured by the equity multiplier.

Therefore, DuPont analysis is represented in mathematical form by the following calculation: ROE = Profit Margin x Asset Turnover Ratio x Equity Multiplier.

DuPont analysis breaks ROE into its constituent components to determine which of these components is most responsible for changes in ROE.

Net margin: Expressed as a percentage, net margin is the revenue that remains after subtracting all operating expenses, taxes, interest and preferred stock dividends from a company's total revenue.

Asset turnover ratio: This ratio is an efficiency measurement used to determine how effectively a company uses its assets to generate revenue. The formula for calculating asset turnover ratio is total revenue divided by total assets. As a general rule, the higher the resulting number, the better the company is performing.

Equity multiplier: This ratio measures financial leverage. By comparing total assets to total stockholders' equity, the equity multiplier indicates whether a company finances the purchase of assets primarily through debt or equity. The higher the equity multiplier, the more leveraged the company, or the more debt it has in relation to its total assets.

DuPont analysis involves examining changes in these figures over time and matching them to corresponding changes in ROE. By doing so, analysts can determine whether operating efficiency, asset use efficiency or leverage is most responsible for ROE variations.

4.2.8 Influence Quantification

Influence quantification is the kind of method which we can use to analysis the

influence of every indicator to the final change. It enables us to analysis the indicators and its influence on basic ratio, so we can figure out which indicator has contributed the most to the basic ratio. Generally, there are two important methods which we can use to influence quantification.

A) Method of gradual changes

This method enables us to quantify the change of basic ratio caused by the change in the component ratio. Because there are three components of ROE, so it can be calculated as:

$$\triangle x_{a1} = \triangle a_1 \cdot a_{2,0} \cdot a_{3,0}$$

$$\triangle x_{a2} = a_{1,1} \cdot \triangle a_2 \cdot a_{3,0}$$

$$\triangle x_{a3} = a_{1,1} \cdot a_{2,1} \cdot \triangle a_3 \qquad (4.2.12)$$

In these Formulas, x is the basic ratio, $\triangle x$ is the absolute change of basic ratio, while a is the component ratio and $\triangle a$ is the absolute change of the component ratio.

B) Logarithmic method

Logarithmic method takes into account the current changes of all the factors studied. We can use only one formula to assess the influence of every component ratio on the basic ratio. The formula is:

$$\triangle x_{ai} = (\ln I_{ai}) / (\ln I_x) \cdot \triangle x \qquad (4.2.13)$$

In this formula, x stands for the basic ratio, $\triangle x$ is the absolute change of the basic ratio. I_x is the index of change in basic ratio, and $I_x = \frac{x1}{x0}$. $I_a = \frac{a1}{a0}$ is the index of the change in the component ratio.

B) Financial analysis of BNP Paribas

4.3 Common-size Analysis

In this part, we will use the common-size analysis to check the general economic situation of BNP Paribas. First, we can examine the costs and profit as the percentage of revenues from 2012 to 2016 to know how the profitability of BNP Paribas has changed during this period in horizontal analysis. Also, in this way, we can know how the company's assets structure has changed. While in vertical analysis, we can set the 2012 as benchmark and compare the 2013 to 2016 relative to 2012.

4.3.1 Vertical common-size analysis

In this part, we will use the theory in chapter 2 and the data in income statement will be used. I will set the revenue as the benchmark and compare other items as the percentage of the revenue in every year.

In the table 4.1 below, we can recognize that the composition of revenue is steady. From 2012 to 2013, the interest income decreased about 4% and the income from other activities increased about 4%. From then on, the percentages of every part haven't changed a lot. Also, the expenses of every sector are steady too, there weren't great changes. About the gross profit, it is increasing generally but the degree of increasing is not so high, around 3% in 5 years. The operating expenses and costs of depreciation, amortization and impairment is steady too. The gross profit has increased about 1% in 5 years. What attracts is the cost of risk in 2014, it was 10.35% and about two times larger than others. That's because, in 2014, there was a cost of 6,000 million euros in settlement with US authority. But this number is 0 in 2012, 798 in 2013, 100 in 2015 and again 0 in 2016. Which leaded to the consequence that the operating income percentage in 2014 is much lower than others. The share of earning of associates is steady but the net gain of non-current assets dropped a lot from 1.87% to 0.01%. The extremely low percentage of net

income in 2014 can also be explained by the 6,000 million euros cost.

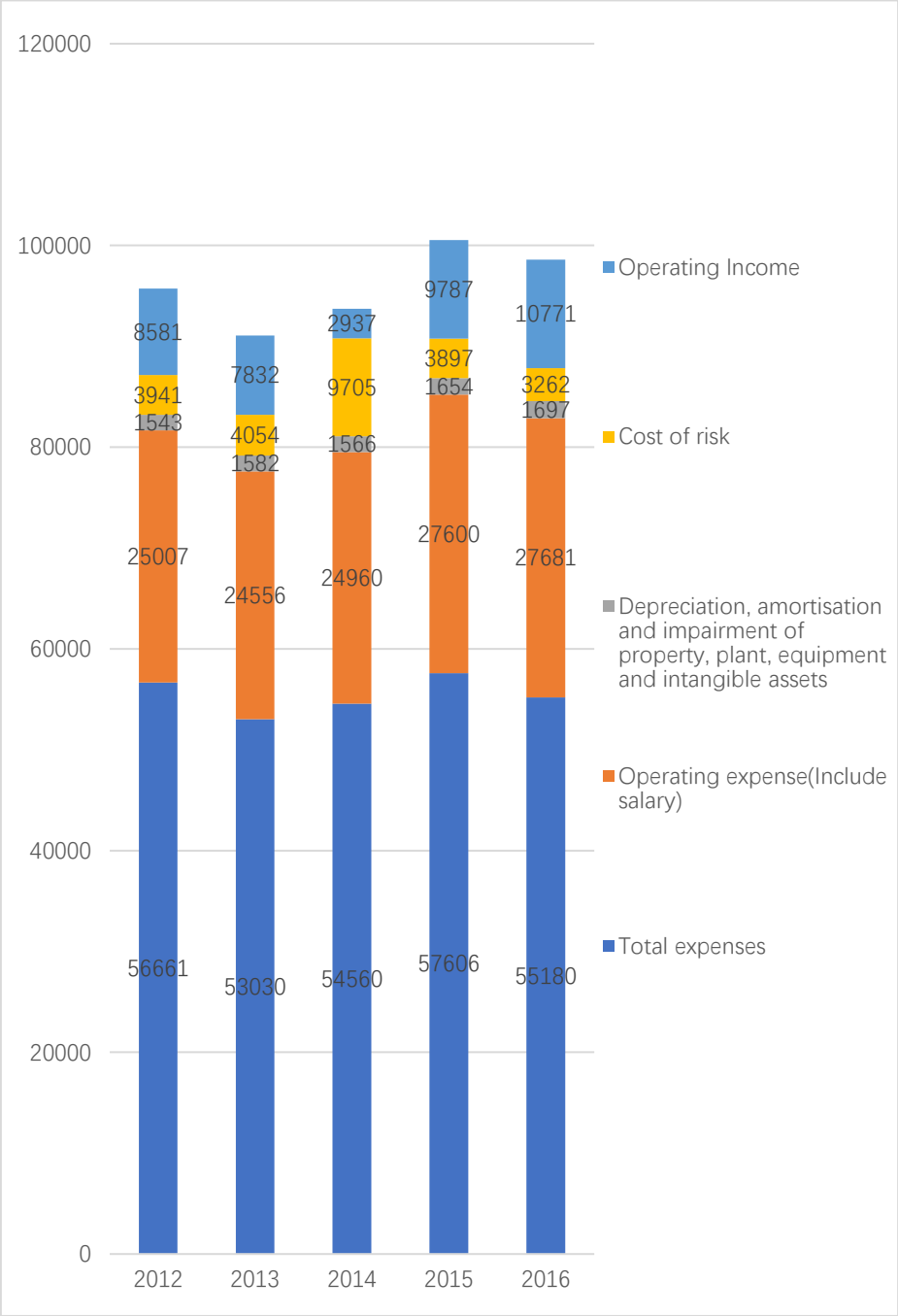
Table 4.1 Vertical Common-size Analysis of Income Statement

	2012	2013	2014	2015	2016
Revenue	100.00%	100.00%	100.00%	100.00%	100.00%
Interest income	46.46%	42.41%	41.30%	41.16%	41.48%
Commission income	13.16%	13.39%	13.51%	13.26%	12.95%
Income from other activities	40.38%	44.20%	45.19%	45.58%	45.57%
Interest expense	23.74%	19.99%	19.62%	18.73%	18.78%
Commission expense	5.29%	5.58%	5.63%	5.69%	5.64%
Expense on other activities	30.15%	32.17%	32.97%	32.88%	31.54%
Gross Profit	40.81%	42.27%	41.79%	42.71%	44.03%
Operating expense(Include salary)	26.12%	26.73%	26.63%	27.45%	28.08%
Depreciation, amortisation and impairment of property, plant, equipment and intangible assets	1.61%	1.72%	1.67%	1.65%	1.72%
Gross operating Income	13.08%	13.81%	13.49%	13.61%	14.23%
Cost of risk	4.12%	3.54%	3.95%	3.78%	3.31%
Costs of settlement with US government	0.00%	0.87%	6.40%	0.10%	0.00%
Operating Income	8.96%	8.53%	3.13%	9.73%	10.92%
Share of earnings of	0.51%	0.35%	0.44%	0.59%	0.64%
Net gain on non-current	1.87%	0.31%	0.17%	0.99%	0.01%
Good will	0.51%	0.27%	0.37%	0.99%	0.18%
Pre-tax income	10.83%	8.92%	3.36%	10.32%	11.37%
corporate income tax	3.20%	2.99%	2.82%	3.32%	3.14%
Net income	7.64%	5.92%	0.54%	7.01%	8.23%

The income from other activities include net gain/loss on financial instruments through profit or loss, net gain/loss on available-for-sale financial assets and other financial assets not measured at fair value and income from other activities.

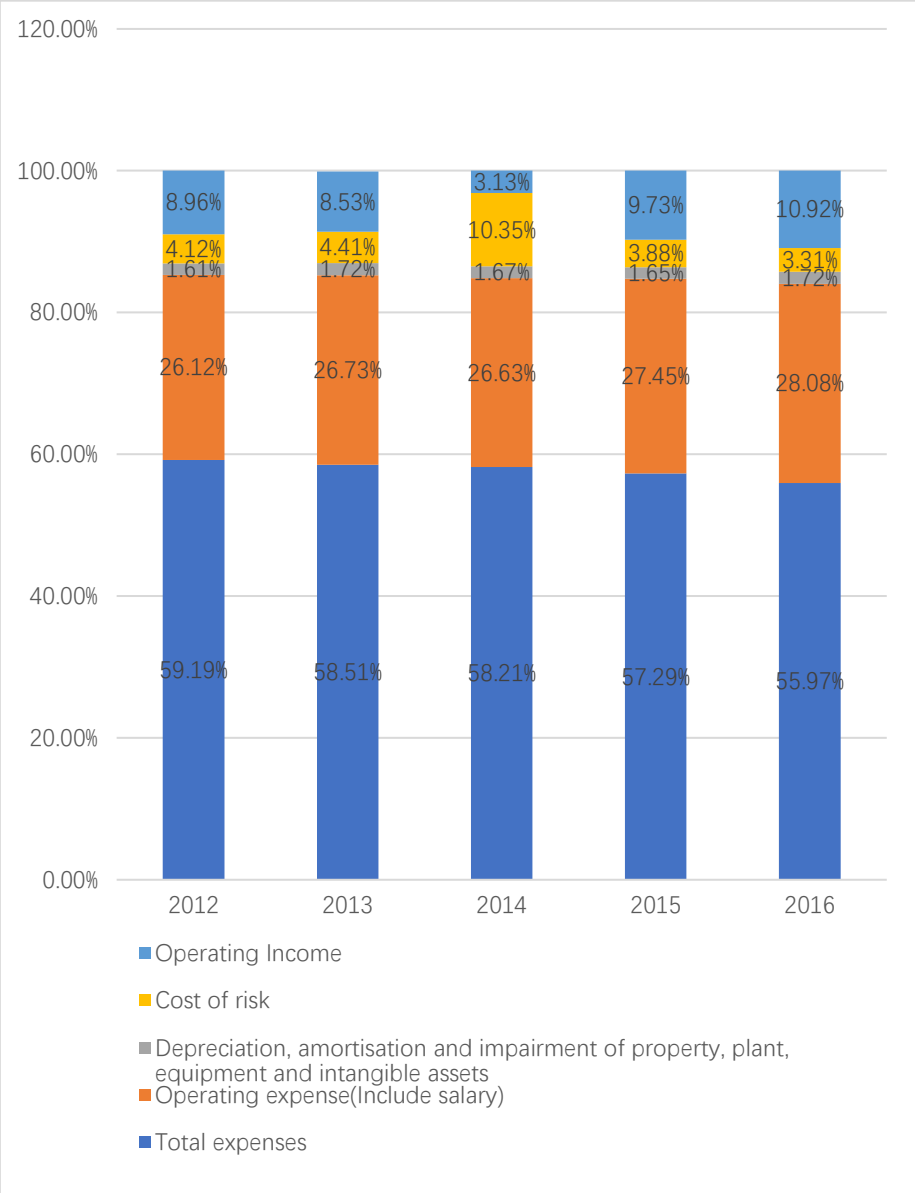
To simplify the problem, we put cost of risk and costs of settlement with US government together as cost of risk. Chart 4.1 is the composition of revenue, which means the revenue consists of these five components: Operating income, cost of risk (including costs of settlement with US government), depreciation, operating expense (including salary) and total expenses (including interest expense, commission expense and expense on other activities).

Chart 4.1 The composition of income statement



As we can see from chart 4.1, the total expenses of BNP Paribas have been changing in these 5 years, however, it hasn't changed too much in every year and has changed almost back to the original level. The operating expenses hasn't changed much, the greatest change is still less than 10%. Depreciation, amortization and impairment is also steady. But the cost of risk and operating income are special, there were highest cost of risk and lowest operating income in 2014. As mentioned before, it depended greatly on the settlement costs.

Chart 4.2 Vertical common-size analysis of income statement



As for the percentage, the major change is also the operating income and cost of risk. Other elements are stable, hasn't changed much.

We can also do vertical common-size analysis with the balance sheet of the company. First, we analysis the change of assets, then we can get table 4.2 like below:

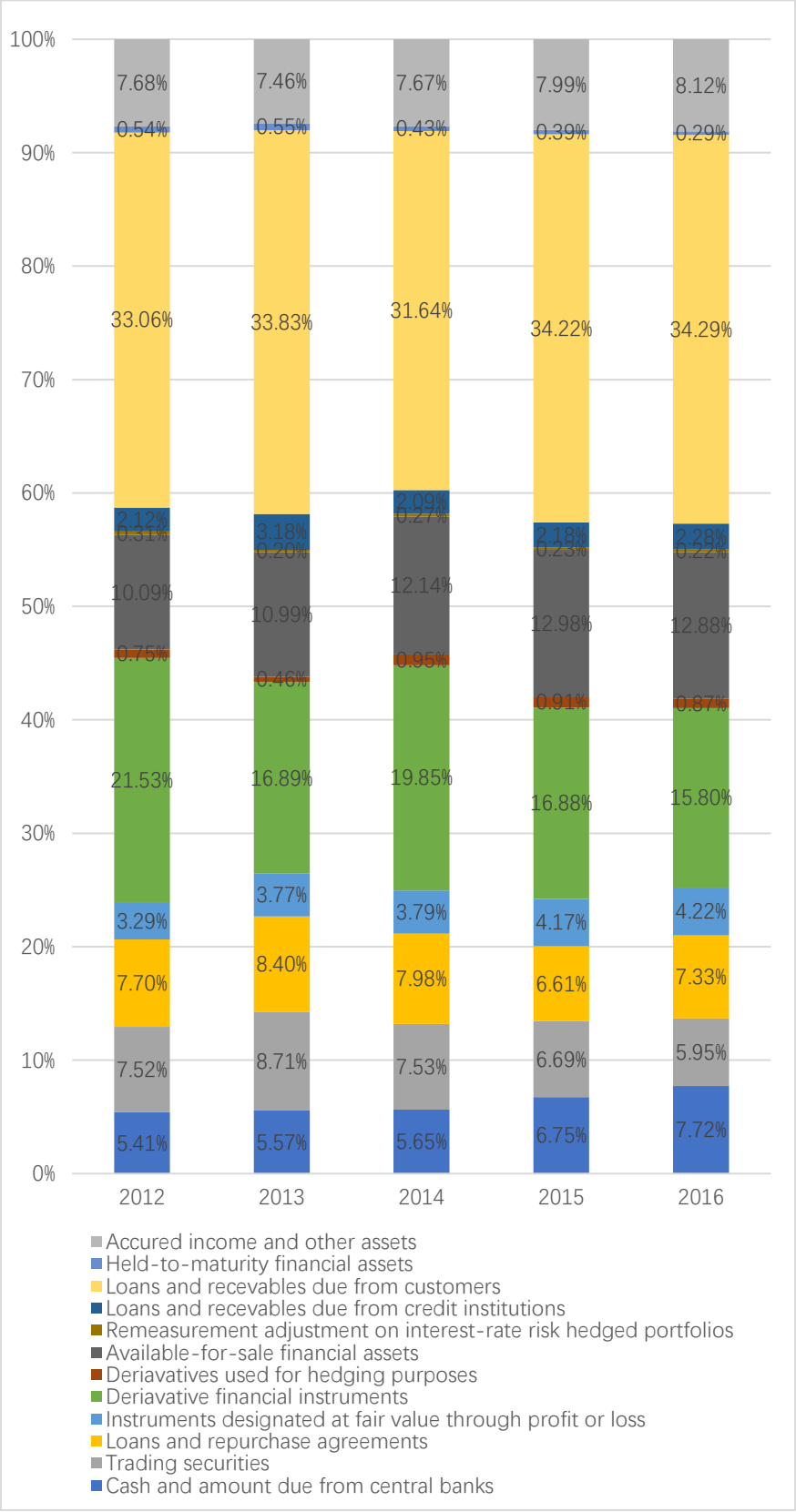
Table 4.2 The vertical common-size analysis of assets of BNP Paribas

	2012	2013	2014	2015	2016
Cash and amount due from central	5.41%	5.57%	5.65%	6.75%	7.72%
Trading securities	7.52%	8.71%	7.53%	6.69%	5.95%
Loans and repurchase agreements	7.70%	8.40%	7.98%	6.61%	7.33%
Instruments designated at fair value through profit	3.29%	3.77%	3.79%	4.17%	4.22%
Deriavative financial instruments	21.53%	16.89%	19.85%	16.88%	15.80%
Deriavatives used for hedging purposes	0.75%	0.46%	0.95%	0.91%	0.87%
Available-for-sale financial assets	10.09%	10.99%	12.14%	12.98%	12.88%
Loans and recevables due from credit institutions	2.12%	3.18%	2.09%	2.18%	2.28%
Loans and recevables due from customers	33.06%	33.83%	31.64%	34.22%	34.29%
Remeasurement adjustment on interest-rate risk hedged portfolios	0.31%	0.20%	0.27%	0.23%	0.22%
Held-to-maturity financial assets	0.54%	0.55%	0.43%	0.39%	0.29%
Current and deferred tax assets	0.45%	0.49%	0.42%	0.39%	0.38%
Accrued income and other assets	5.21%	4.90%	5.30%	5.42%	5.58%
Equity-method investments	0.37%	0.36%	0.35%	0.35%	0.33%
Investment property	0.05%	0.10%	0.08%	0.08%	0.09%
Property, plant and equipment	0.91%	0.94%	0.87%	1.08%	1.08%
Intangible assets	0.14%	0.14%	0.14%	0.16%	0.16%
Goodwill	0.56%	0.54%	0.51%	0.52%	0.49%
Total asset	100.00%	100.00%	100.00%	100.00%	100.00%

In order to show the change clearer, we put current and deferred tax assets, accrued income and other assets, equity-method investments, investment property, property, plant and equipment, intangible assets, and goodwill together and get new Accrued

income and other assets. Using the data to make a new chart to show the composition. So, we can get the chart 4.3 below:

Chart 4.3 The vertical common-size analysis of assets of BNP Paribas



The remeasurement adjustment on interest-rate risk hedged portfolios and held-to-maturity financial assets are very small part two, so we don't check the change of them. From the information from this table, we can know that, the percentage of cash and amount due from central banks has been growing. And by the end of 2016, this number has increased more than 2%. The Trading security increased in 2013 but after that, it has been decreasing. The number has decreased about 1.5%. As for the loans and repurchase agreements, the number has both increasing and decreasing during this period. But in this 5 years, it has decreased slightly about 0.4%. Instruments designated at fair value through profit or loss is quite stable, the percentage has been increasing since 2012 but not much. By the end of 2016, it increased about 1%. Derivative financial instrument is one of the main components of assets of BNP Paribas. The percentage has changed a lot in this period. In 2013, the number decreased a lot about 4.5%. Then in 2014, it increased again by about 3%, but it had decreased in 2015 and 2016 to the lowest level.

The available for sale financial assets has increased in general about 3%. The loans and receivables due from credit institutions has increased in 2013 but in the end fell back to the original level. The loans and receivables due from customers are the major part of the bank’s asset. In general, this number has been kept in the range from 30% to 35%. In 2014, it has reached to the lowest level.

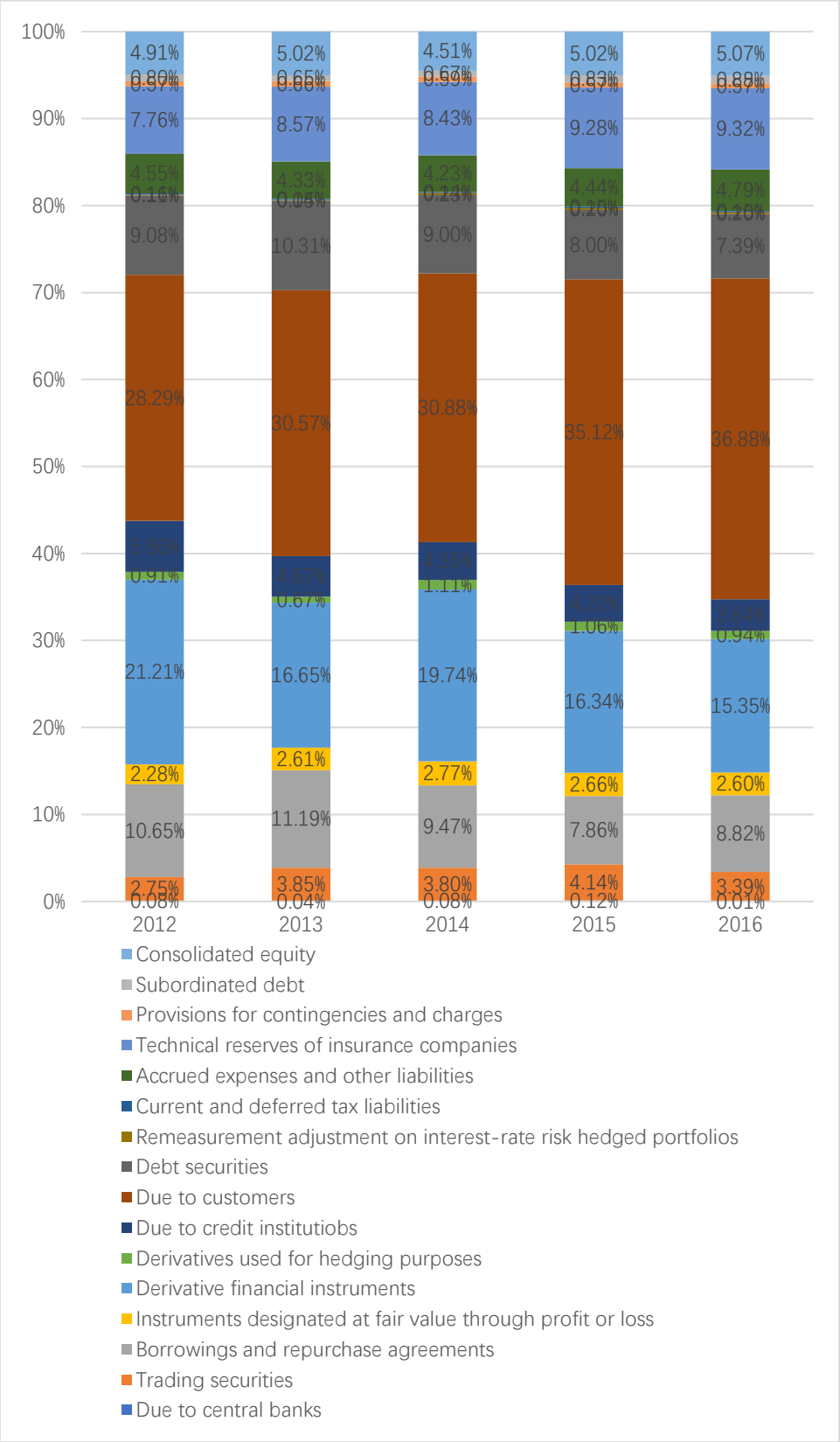
Then we use the same method to the liabilities and shareholder’s equity, so we can understand the company’s capital structure. Using the data get from balance sheet, we can know the situation of liabilities and shareholder’s equity, then we divide these numbers by total liabilities and shareholder’s equity to get the percentage of every components. Then we get table 4.3 as follows:

Table 4.3 The vertical common-size analysis of liabilities & shareholder’s equity of BNP Paribas

	2012	2013	2014	2015	2016
Due to central banks	0.08%	0.04%	0.08%	0.12%	0.01%
Trading securities	2.75%	3.85%	3.80%	4.14%	3.39%
Borrowings and repurchase agreements	10.65%	11.19%	9.47%	7.86%	8.82%
Instruments designated at fair value through profit or loss	2.28%	2.61%	2.77%	2.66%	2.60%
Derivative financial instruments	21.21%	16.65%	19.74%	16.34%	15.35%
Derivatives used for hedging purposes	0.91%	0.67%	1.11%	1.06%	0.94%
Due to credit institutiobs	5.86%	4.67%	4.35%	4.22%	3.64%
Due to customers	28.29%	30.57%	30.88%	35.12%	36.88%
Debt securities	9.08%	10.31%	9.00%	8.00%	7.39%
Remeasurement adjustment on interest-rate risk hedged portfolios	0.11%	0.05%	0.23%	0.20%	0.20%
Current and deferred tax liabilities	0.16%	0.14%	0.14%	0.15%	0.15%
Accrued expenses and other liabilities	4.55%	4.33%	4.23%	4.44%	4.79%
Technical reserves of insurance companies	7.76%	8.57%	8.43%	9.28%	9.32%
Provisions for contingencies and charges	0.57%	0.66%	0.59%	0.57%	0.57%
Subordinated debt	0.80%	0.65%	0.67%	0.83%	0.88%
Consolidated equity	4.91%	5.02%	4.51%	5.02%	5.07%
Total liabilities& shareholder's equity	100.00%	100.00%	100.00%	100.00%	100.00%

We use the data above to make a new chart to show the change of capital structure. From this chart, we can know the percentage change of every kind of liability and consolidated equity. The major components are derivative financial instruments and the liability due to customers. The number of first one had been decreasing in 5 years and had decreased 6%. However, the liability due to customers has been increasing, and by the end of 2016, the number has increased almost 10%. Other percentages are stable.

Chart 4.4 The vertical common-size analysis of liabilities& shareholder's equity



4.3.2 Horizontal common-size analysis

In this part, we will set the data in 2012 as the benchmark and compare with the data in following years. First, we will analysis the income statement.

Table 4.4 The horizontal common-size analysis of income statement

	2012	2013	2014	2015	2016
Revenue	100.00%	95.95%	97.91%	105.03%	102.99%
Interest income	100.00%	87.59%	87.03%	93.04%	91.95%
Commission income	100.00%	97.62%	100.48%	105.82%	101.30%
Income from other activities	100.00%	105.02%	109.58%	118.55%	116.24%
Interest expense	100.00%	80.77%	80.89%	82.83%	81.47%
Commission expense	100.00%	101.07%	104.02%	112.84%	109.75%
Expense on other activities	100.00%	102.38%	107.06%	114.54%	107.75%
Gross Profit	100.00%	99.36%	100.25%	109.89%	111.11%
Operating expense(Include salary)	100.00%	98.20%	99.81%	110.37%	110.69%
Depreciation, amortisation and impairment of property, plant, equipment and intangible assets	100.00%	102.53%	101.49%	107.19%	109.98%
Gross operating Income	100.00%	101.29%	101.29%	109.28%	109.28%
Cost of risk	100.00%	82.62%	94.01%	96.35%	82.77%
Costs of settlement with US government	0	798	6000	100	0
Operating Income	100.00%	91.27%	34.23%	114.05%	125.52%
Share of earnings of associate	100.00%	66.05%	83.44%	120.45%	129.45%
Net gain on non-current asset	100.00%	15.90%	8.65%	55.58%	0.67%
Good will	100.00%	51.22%	71.63%	202.65%	37.14%
Pre-tax income	100.00%	78.95%	30.36%	100.07%	108.08%
corporate income tax	100.00%	89.90%	86.37%	109.02%	101.18%
Net income	100.00%	74.37%	6.93%	96.32%	110.97%

From this table, we can see the change of every element's change of the income

statement. The revenue decreased a little in 2013 and 2014, but in 2015 and 2016, it has increased and been more than the level of 2012. The interest expense is the only one that had decreased among three kinds of expenses, which has decreased about 20%. The other two expenses both increased about 10% in 5 years. The gross profit didn't change much in first two years, but it increased about 10% in 2015 and increased a little in 2016. The operating expenses decreased a little in first two years, but it increased 10% in 2015 and 2016. Depreciation, amortization and impairment had been increasing. In first two years, it increased a little about 2%, but in 2015 and 2016, it increased about 10%. Gross operating profit increased about 10% in 2015 and 2016 in the situation which operating expenses and depreciation both increased, so we can know that the increasing in gross profit is really high. The cost of risk had reached the top level in 2014 and was 2.5 times more than the basic level in 2012, which made the operating income in 2014 lowest among this 5 years. In general, the cost of risk decreased in 5 years, so the operating income had reached the highest level in 2016. The income from other activity decreased in the following 4 years, majorly because the net gain on non-current assets was the highest in 2012. As for pre-tax income, the number in 2013 and 2014 are lower than the basic level. The reason is: the operating income decreased in this two years and the income from other activity were also lower than other years. Only the pre-tax income in 2016 is higher than basic level majorly because the gross profit was the highest. The net income was lowest in 2014 about 7% of basic level and highest in 2016 about 111% of basic level.

Then we use horizontal common-size analysis to balance sheet. First, we choose the data of asset to make a new table. In order to see clearer, we put small numbers (current and deferred tax assets, accrued income and other assets, equity-method investments, investment property, property, plant and equipment, intangible assets, and goodwill) together and get new Accrued income and other assets.

Table 4.5 The horizontal common-size analysis of asset.

	2012	2013	2014	2015	2016
Cash and amount due from central banks	100.00%	97.67%	113.84%	130.39%	155.44%
trading securities	100.00%	109.95%	109.12%	93.05%	86.21%
loans and repurchase agreements	100.00%	103.50%	112.85%	89.71%	103.64%
instruments designated at fair value through profit or loss	100.00%	108.57%	125.52%	132.29%	139.56%
deriavative financial instruments	100.00%	74.46%	100.45%	81.98%	79.92%
deriavatives used for hedging purposes	100.00%	58.65%	138.54%	126.61%	127.10%
available-for-sale financial assets	100.00%	103.40%	131.06%	134.51%	138.99%
loans and recevables due from credit institutions	100.00%	142.42%	107.28%	107.48%	117.34%
loans and recevables due from customers	100.00%	97.13%	104.26%	108.24%	112.96%
remeasurement adjustment on interest-rate risk hedged portfolios	100.00%	61.14%	96.01%	78.05%	79.92%
held-to-maturity financial assets	100.00%	96.08%	87.17%	75.43%	59.32%
current and deferred tax assets	100.00%	102.18%	99.63%	90.81%	91.98%
accured income and other assets	100.00%	89.23%	110.80%	108.71%	116.72%
equity-method investments	100.00%	93.20%	104.70%	97.95%	98.15%
investment property	100.00%	191.15%	174.11%	176.81%	206.15%
property, plant and equipment	100.00%	97.75%	104.12%	124.68%	130.05%
intangible assets	100.00%	98.14%	114.16%	120.08%	125.30%
goodwill	100.00%	92.97%	99.87%	97.40%	96.46%
total asset	100.00%	94.93%	108.94%	104.56%	108.90%

The cash and amount due from central banks only decreased in 2013 and didn't decrease much. From 2014, it had been increasing and reached top level in 2016 about 1.5 times of basic level. Trading securities increased in 2013 and 2014 about 9% but kept decreasing in 2015 and 2016, about 14%. The loans and repurchase agreements hadn't change much in 5 years, it reached the highest level in 2014 and lowest in 2015. The instruments designated at fair value through profit had been increasing and reached highest level in 2016, increased 40%. However, the derivative financial instruments decreased a lot in general, and in 2013 it is the lowest. Available-for-sale financial assets increased a lot since 2014, then by the

end of 2016, it already increased about 40%.

The loans and receivables due from credit institutions increased 40% in 2013, it decreased in following years but still more than the basic level. The loans and receivables due from customers are the major asset of bank, but the number decreased in 2013, and in following years, this number kept increasing and increased about 13% in 2016. The accrued income is quite unstable, it increased 16% in 2016. Other assets only decreased in 2013. Total asset decreased only in 2013.

Then we use horizontal common-size analysis to liabilities and shareholder's equity.

Table 4.6 Horizontal analysis to liabilities & shareholder's equity

	2012	2013	2014	2015	2016
Due to central banks	100.00%	43.21%	109.66%	155.68%	15.21%
Trading securities	100.00%	133.11%	150.50%	157.43%	134.13%
Borrowings and repurchase agreements	100.00%	99.80%	96.88%	77.20%	90.22%
Instruments designated at fair value through loss	100.00%	108.76%	132.40%	122.03%	124.23%
Derivative financial instruments	100.00%	74.50%	101.40%	80.53%	78.78%
Derivatives used for hedging purposes	100.00%	70.22%	133.02%	121.88%	113.54%
Due to credit institutions	100.00%	75.71%	80.86%	75.31%	67.71%
Due to customers	100.00%	102.59%	118.91%	129.80%	141.97%
Debt securities	100.00%	107.79%	108.01%	92.06%	88.58%
Remeasurement adjustment	100.00%	44.70%	230.53%	190.90%	203.29%
Current and deferred tax liabilities	100.00%	81.32%	94.98%	98.26%	101.35%
Accrued expenses	100.00%	90.41%	101.28%	102.24%	114.67%
Technical reserves of insurance companies	100.00%	104.89%	118.39%	125.04%	130.84%
Provisions for contingencies and charges	100.00%	108.76%	112.54%	103.49%	107.65%
Subordinated debt	100.00%	77.67%	91.55%	108.68%	120.70%
Consolidated equity	100.00%	97.18%	100.05%	106.92%	112.42%
Total liabilities& shareholder's equity	100.00%	94.93%	108.94%	104.56%	108.90%

This table shows the information of horizontal change of liabilities and shareholder's equity. The amount due to central bank changes with the government's policy. It decreased a lot in 2013 to 43%, then increased back and reached 155% in 2015. But in 2016 it reached the lowest level of 15%. The trading securities increased in all 5 years compared with the basic year. In 2015 it reached

the highest level of about 160%. The borrowing and repurchase agreements decreased all 5 years compared with the basic year. The 2015 is the lowest. The instruments designated ta fair value through loss kept increasing in 2013 and 2014 and reached 132%, but since then it decreased in 2015 and 2016. However, it is still more than the basic year. Derivative financial instruments decreased a lot in 2013 but improved back in 2014. However, it still decreased to about 80% in 2015 and 2016. Derivatives used for hedging decreased a lot in 2013, but in following years the numbers are all higher than basic level. So, we can see that the stability of asset value was the best in 2013. The liability due to credit institutions decreased a lot in following years, while the liability due to security also decreased in general. However, the liability due to customers had been increasing in 5 years, and by the end of 2016 it had been 1.4 times more than the basic year. Accrued expenses decreased in 2013 and had been increasing in following years. Technical reserves of insurance company had been increasing and reached the highest level in 2016. Other liabilities are small parts and increased a little. The total liability and shareholder's equity is floating in 5 years. In 2013 it decreased 5%. In next 3 years it all increased.

4.4 Financial ratio analysis

In this part, we will use financial ratio analysis to deeply analysis the company's financial situation. We will calculate financial ratio mentioned above: liquidity measurement ratio, profitability indicator ratio, debt ratio and operating performance ratio.

4.4.1 Specific ratios for banks

A) Loan growth

We can use the data from table 4.5, so we can know how the loan growth has changed in 5 years. Then we can get the horizontal change of loan. In this table, we can know the loan growth compared with 2012. The greatest growth is the change

of loans and receivables due from credit institutions in 2013, the growth is about 42.42%. The only two decreases are loans and receivables due from customers in 2013 compared with 2012. So, in general, the loans have grown compared with 2012 in 2016.

Table 4.7 Loan growth

	2012	2013	2014	2015	2016
Loans and receivables due from credit institutions	100.00%	142.42%	107.28%	107.48%	117.34%
Loans and receivables due from customers	100.00%	97.13%	104.26%	108.24%	112.96%

B) Deposit growth

Table 4.8 Deposit growth

	2012	2013	2014	2015	2016
Cash and amount due from central banks	100.00%	97.67%	113.84%	130.39%	155.44%

Take the data from table 4.5, we can get table 4.8 above. In this table, we can know how cash and amount due from central banks (which we regard as deposit) has changed in this period. As we can see, the only decrease was in 2013, and since then the number increased more than 55% compared with 2012. So, the ability to lend loans of BNP Paribas has increased a lot.

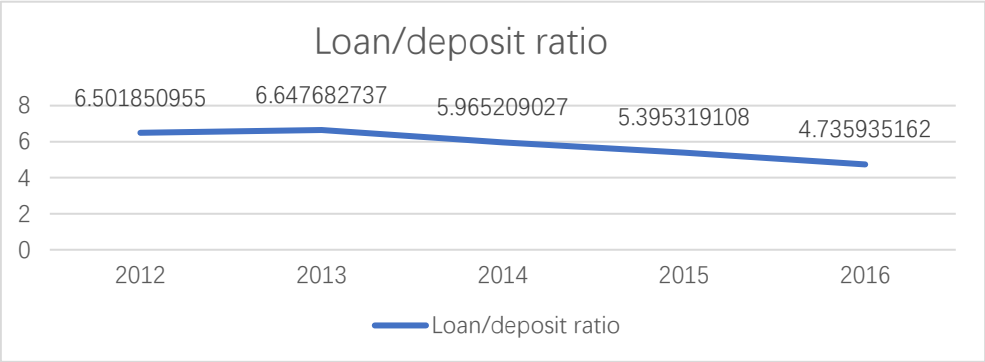
C) Loan/deposit ratio

We can use data from balance sheet to make table 4.9 and chart 4.5.

Table 4.9 Loan and deposit information

	2012	2013	2014	2015	2016
Total loans	670926	670000	700751	725924	759644
Cash and amount due from central banks	103190	100787	117473	134547	160400
Loan/deposit ratio	6.501851	6.647683	5.965209	5.395319	4.735935

Chart 4.5 Loan/deposit ratio



From chart 4.5, we can know that the loan/deposit ratio is higher than 4, which means that the managing of the company is quite aggressive, also it shows that the company has the absolute confidence that there won't be bank run. But the number is going down from 2012 to 2016, so we can say that the managing is not so aggressive, and the liquidity is better than before.

D) Credit quality

In this part, I will research post-due loans and non-performing loans of the company and find the change of the credit quality.

Table 4.9 Post-due but not impaired loans

	2012		2013		2014		2015		2016	
	Total	Collateral received	Total	Collateral received	Total	Collateral received	Total	Collateral received	Total	Collateral received
Loans and receivables due from credit institutions	125	49	295	65	140	90	168	315	255	42
Loans and receivables due from customers	16437	9734	12532	6872	12252	6048	14702	7793	12066	5809
Total post-due but not impaired loans	16562	9783	12827	6937	12392	6138	14870	8108	12321	5851
Collateral received/Total	59.07%		54.08%		49.53%		54.53%		47.49%	
Horizontal change	100.00%	100.00%	77.45%	70.91%	74.82%	62.74%	89.78%	82.88%	74.39%	59.81%

In this table, we can find the information of post-due but not impaired loans from

2012 to 2016. We can find that post-due but not impaired loans have been decreasing in general, only the number in 2015 increased compared with 2014. So, we can say that credit quality increased in the respect of post-due loans. Then we can know the change of collateral received/total ratio in chart 4.5. This showed that the value of collateral the bank receives is taking less percentage of the loans, which is bad for bank.

Chart 4.5 Collateral received/ Total ratio of post-due loans

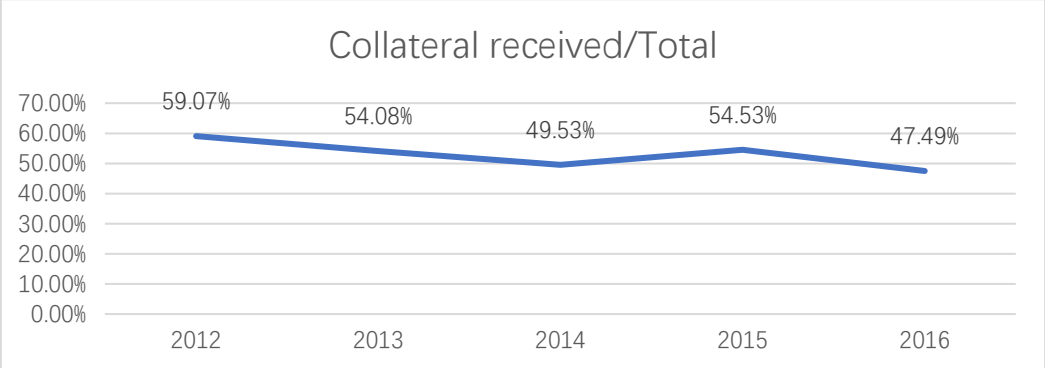


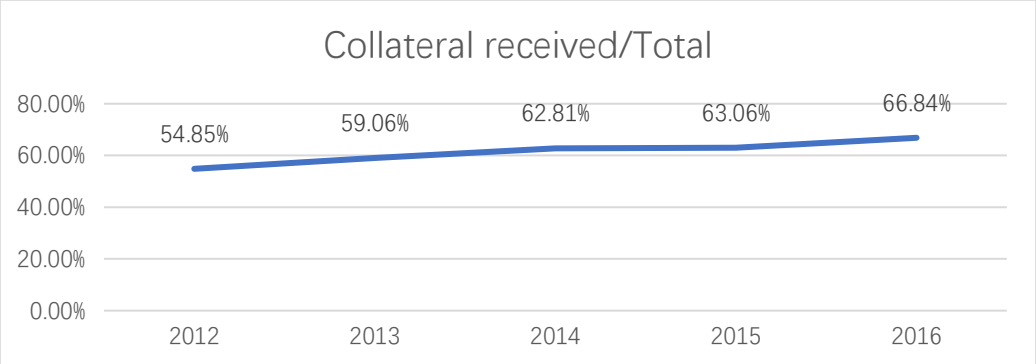
Table 4.10 Doubtful loans

	2012		2013		2014		2015		2016	
	Doubtful loans	Received	Doubtful loans	Received	Doubtful loans	Received	Doubtful loans	Received	Doubtful loans	Received
Available-for-sale financial assets	49		52		116		56		21	
Loans and receivables due from credit institutions	487	318	390	288	209	109	152	303	107	351
Loans and receivables due from customers	20240	11429	22592	13706	20134	13190	18521	11814	17855	11981
Doubtful assets	20776	11747	23034	13994	20459	13299	18729	12117	17983	12332
Financing commitments given	739	72	584	149	429	321	587	515	1026	1058
Gurantee commitments given	720	376	828	295	796		717		1025	
Off-balance sheet doubtful commitments	1459	448	1412	444	1225	321	1304	515	2051	1058
Total	22235	12195	24446	14438	21684	13620	20033	12632	20034	13390
Collateral received/Total	54.85%		59.06%		62.81%		63.06%		66.84%	
Horizontal change	100%	100%	110%	118%	98%	112%	90%	104%	90%	110%

In table 4.10, we can see that doubtful loan only increased in 2013, it has been

decreasing since then. And by the end of 2016, the doubtful loan decreased to 90% of the original level. In addition, the collateral/total ratio has been increasing since 2012. By the end of 2016, it has increased to 66.84% from 54.85%. These two facts tell us that the credit quality of BNP Paribas in respect of doubtful loans has increased.

Chart 4.6 Collateral received/total ratio of doubtful loans



4.4.2 Profitability indicator ratio

A) Profit margin analysis

Here are the data taken from the P/L statements.

Table 4.11 Information to calculate profit margins

	2012	2013	2014	2015	2016
Gross profit	39072	38822	39168	42938	43411
Operating profit	8581	7832	2937	9787	10771
Pre-tax profit	10372	8189	3149	10379	11210
Net income	7313	5439	507	7044	8115
Revenue	95733	91852	93728	100544	98591

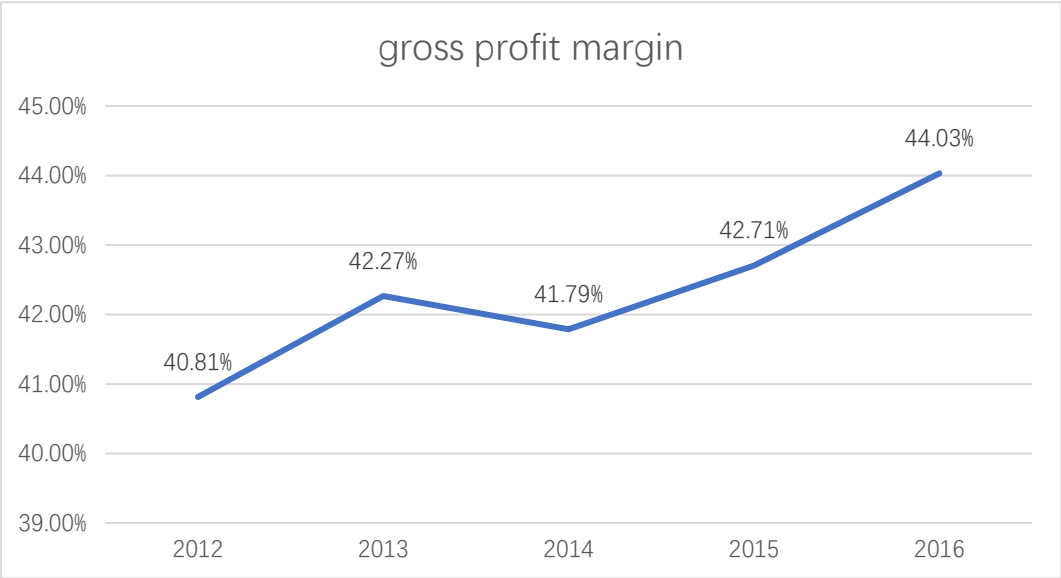
Then we calculate the margins as follows:

Table 4.12 Profit margins

	2012	2013	2014	2015	2016
Gross profit margin	40.81%	42.27%	41.79%	42.71%	44.03%
Operating profit margin	8.96%	8.53%	3.13%	9.73%	10.92%
Pre-tax profit margin	10.83%	8.92%	3.36%	10.32%	11.37%
Net income margin	7.64%	5.92%	0.54%	7.01%	8.23%

1st Gross profit margin

Chart 4.7 The change of gross profit margin



In this chart, we can see that the gross profit margin kept increasing except year 2014. Also, all the numbers are above 40%, which means the profitability of BNP Paribas is better and better.

Then we set 2012 as basic year and check the growth rate of gross profit and revenue.

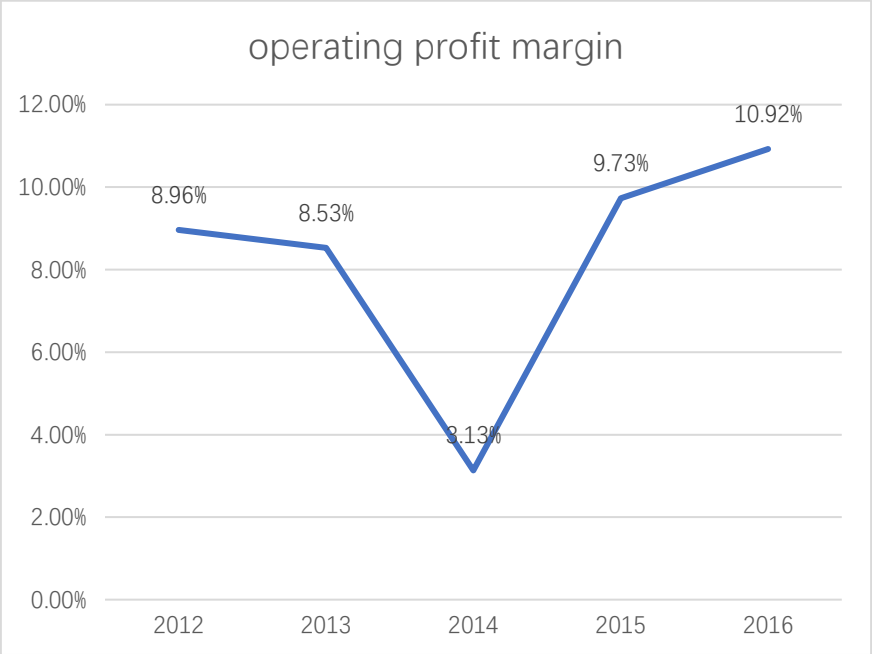
Table 4.13 Growth rates of gross profit and revenue from 2013 to 2016

	2013	2014	2015	2016
growth rate of gross profit	-0.64%	0.25%	9.89%	11.11%
growth rate of revenue	-4.05%	-2.09%	5.03%	2.99%

In 2013, although both of growth rates are negative, but the degree gross profit decreased is still far lower than the decrease of revenue. So the gross profit margin will increase in the end. In 2014, the revenue is lower than 2012 but gross profit is higher, so the number will be higher than 2012, however the degree revenue decreases is lower than 2013, so this number can't be higher than 2013. In 2015 and 2016, the increase of gross profit is much higher than the increase of revenue, so the gross profit margins can rank top 2 in 5 years.

2nd Operating profit margin

Chart 4.8 The change of operating profit margin



As we can see, the operating profit margin decreased in first two years but increased back in the last two years. From the table above, we can see that the operating income in 2014 is far lower than other years.

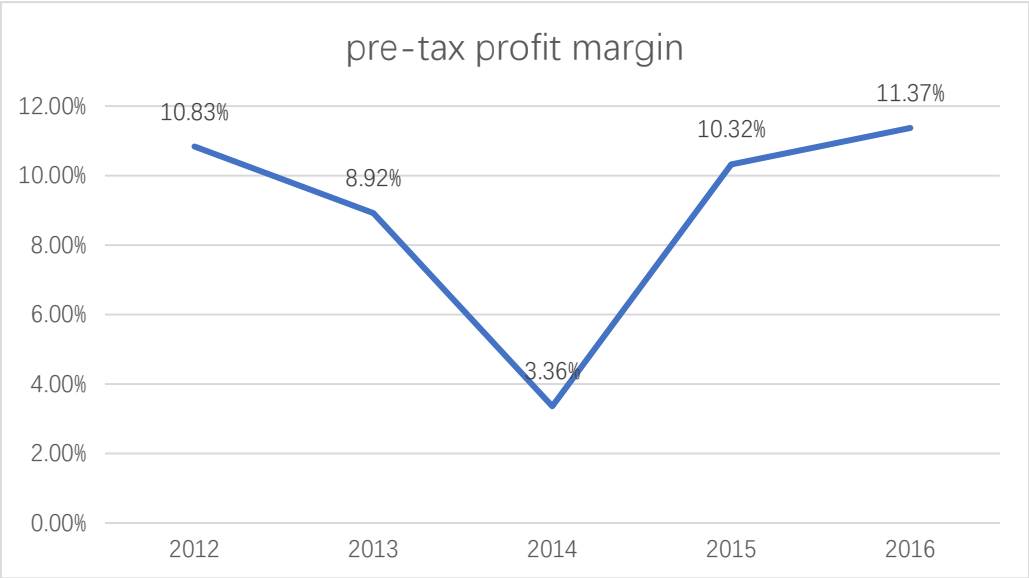
Table 4.14 The calculation of operating income

	2012	2013	2014	2015	2016
Gross Profit	39072	38822	39168	42938	43411
Operating expense(Include salary)	25007	24556	24960	27600	27681
Depreciation, amortisation and impairment of property, plant, equipment and intangible assets	1543	1582	1566	1654	1697
Gross operating Income	12522	12684	12642	13684	14033
Cost of risk	3941	4054	9705	3897	3262
Operating Income	8581	7832	2937	9787	10771

As we can see, the cost of risk in 2014 was the highest and far higher than other years. As I have mentioned in 4.1.1, there was a quite high expense connected with US authority.

3rd Pre-tax profit margin

Chart 4.9 The pre-tax profit margin



This chart is quite similar with the Chart 4.6 above, which Means that the components calculated in this procedure haven't much influence on results.

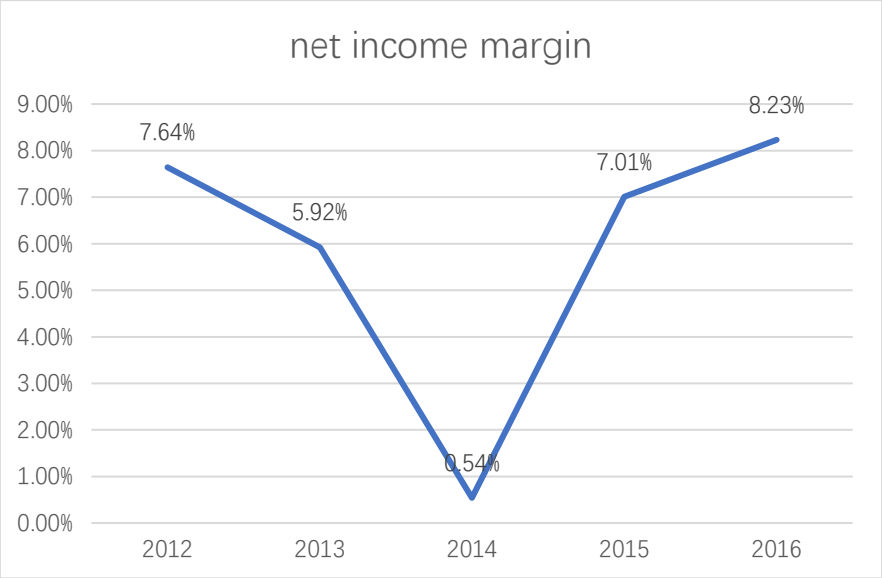
Table 4.15 The calculation of pre-tax income

	2012	2013	2014	2015	2016
Operating Income	8581	7832	2937	9787	10771
Share of earnings of associate	489	323	408	589	633
Net gain on non-current asset	1792	285	155	996	12
Good will	490	251	351	993	182
Pre-tax income	10372	8189	3149	10379	11210

We can use the operating income plus share of earnings of associate and net gain on non-current asset, then minus the good will to get pre-tax income. From this we can see that the change from operating income to pre-tax income are quite similar in this 5 years. Only the increase in 2012 is pretty high, this also explains why the pre-tax income margin in 2012 is higher than the operating profit margin.

4th Net income margin

Chart 4.10 The change of net income margin



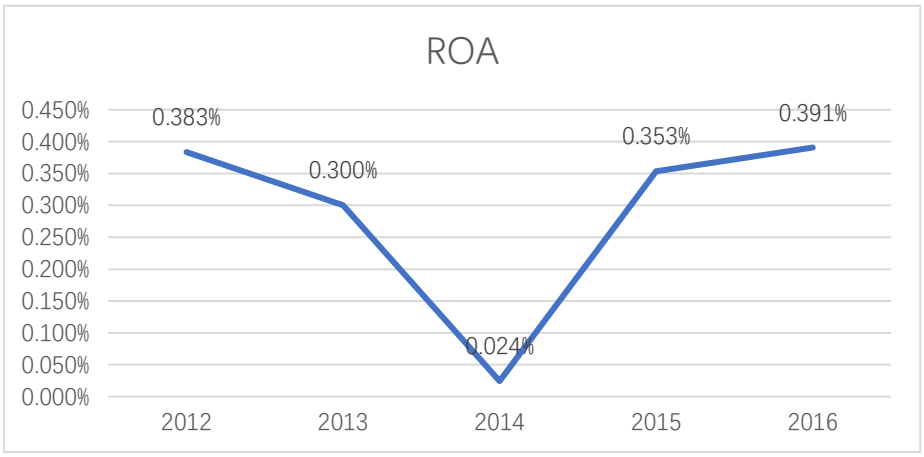
This chart is also similar with the two charts above. So, we can see that the influence of corporate income tax is quite little.

B) Return on asset

Table 4.16 Return of asset

	2012	2013	2014	2015	2016
net income	7313	5439	507	7044	8115
average total asset	1907290	1810522	2077759	1994193	2076959
ROA	0.003834	0.003004	0.000244	0.003532	0.003907

Chart 4.11 ROA



Considering the specific of bank, the ROA is extremely low. The information

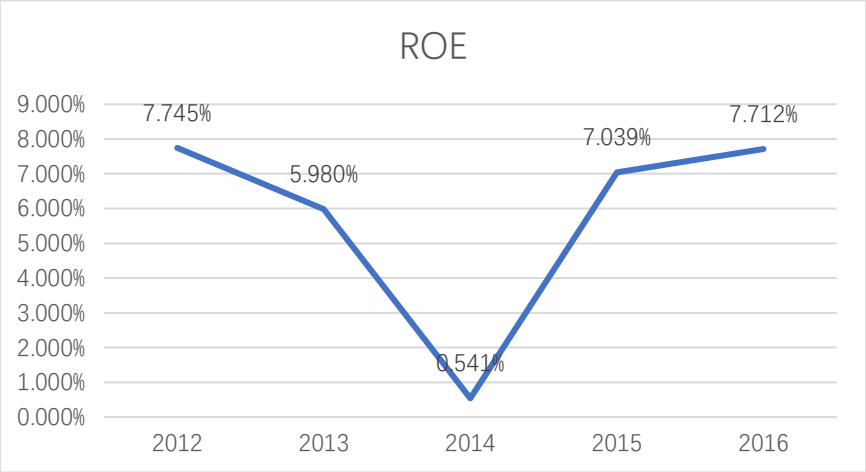
showed in this chart is the same, the net income in 2014 was too low.

C) Return on equity

Table 4.17 Calculation of return of equity

	2012	2013	2014	2015	2016
net income	7313	5439	507	7044	8115
average shareholder's equity	94422	90955	93641	100077	105220
ROE	7.745%	5.980%	0.541%	7.039%	7.712%

Chart 4.12 ROE



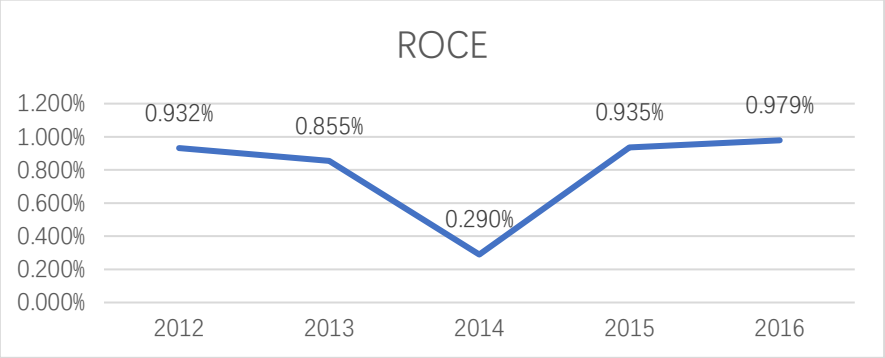
The ROE is stable around 7%, since 2012, the ROE had been dropping and in 2014 it dropped to the lowest level of 0.541%. The reason is the intense decrease in net income, which is resulted from the costs of settlement in 2014.

D) Return on capital employed

Table 4.18 Calculation of return of capital employed

	2012	2013	2014	2015	2016
EBIT	8581	7832	2937	9787	10771
average debt liability	825978	825439	920655	946287	995268
EBIT	94422	90955	93641	100077	105220
capital employed	920400	916394	1014296	1046364	1100488
ROCE	0.932%	0.855%	0.290%	0.935%	0.979%

Chart 4.13 ROCE



The change of ROCE ratio is also the same with before because the intense decrease of operating profit in 2014.

4.4.3 Debt ratio

In this part, we will calculate the debt ratio which can show the debt situation of BNP Paribas, the data which will be used are:

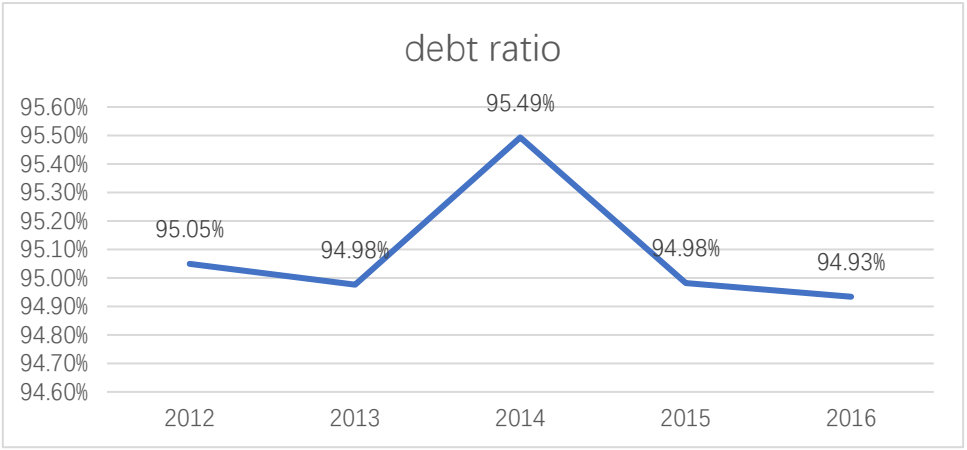
Table 4.19 The date used to calculate debt ratio

	2012	2013	2014	2015	2016
total asset	1907290	1810522	2077759	1994193	2076959
total liability	1812868	1719567	1984118	1894116	1971739
shareholder's equity	94422	90955	93641	100077	105220
EBIT	8581	7832	2937	9787	10771
interest expense	22731	18359	18388	18828	18518

A) Debt ratio

We can use the formula showed before to calculate.

Chart 4.14 Debt ratio of BNP Paribas



From the chart, we can find that the 5 ratios are quite close, only the ratio in 2014 is higher than other years and exceeds about 0.5%. Also, the ratio is decreasing except 2014.

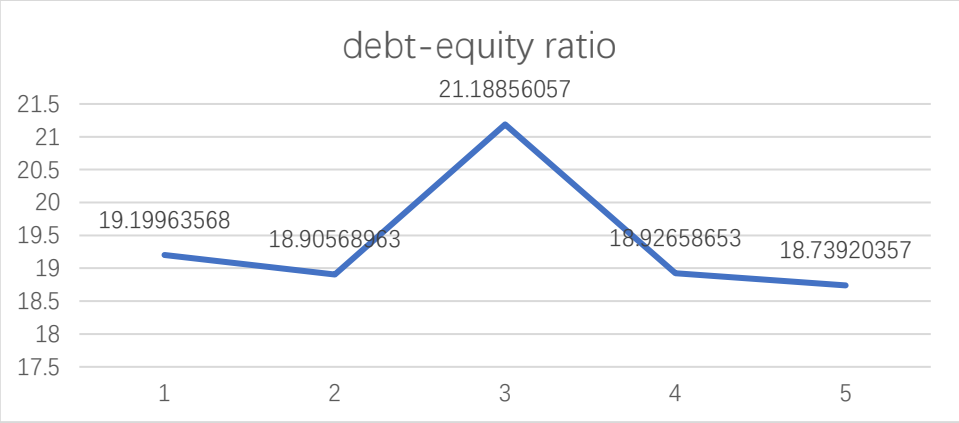
Table 4.20 Horizontal change of total assets and total liabilities

	2012	2013	2014	2015	2016
total asset	100.00%	94.93%	108.94%	104.56%	108.90%
total liabilities	100.00%	94.85%	109.45%	104.48%	108.76%

From this table we can know the horizontal change of asset and liabilities. From this table we can know that the assets and liabilities increased most in 2014. This year is also the only year that the percentage increase in total liabilities is more than total asset, so the debt ratio in 2014 is the only one which is higher than the basic year 2012.

B) Debt-Equity ratio

Chart 4.15 Debt-equity ratio



This is also similar with the former chart.

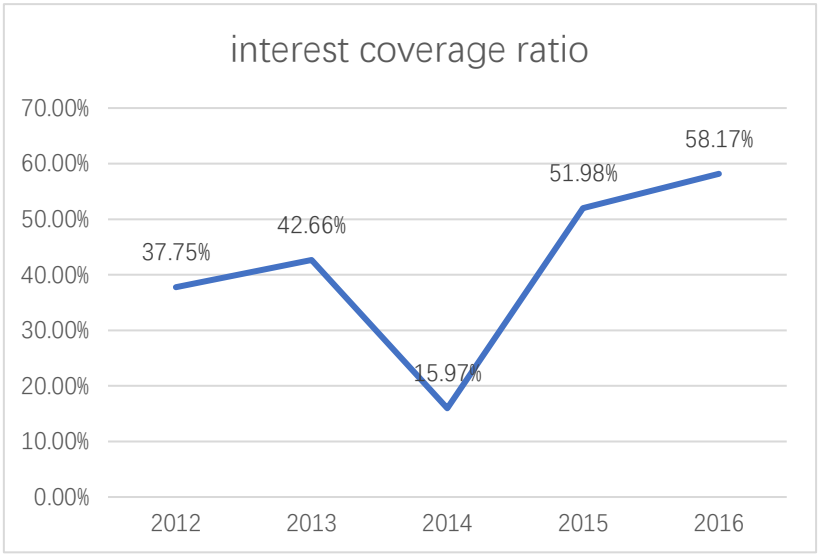
Table 4.21 The horizontal change of equity and liabilities

	2012	2013	2014	2015	2016
equity	100.00%	96.33%	99.17%	105.99%	111.44%
liabilities	100.00%	94.85%	109.45%	104.48%	108.76%

This table showed the horizontal change of equity and liabilities, from which we can find that the percentage change of liabilities is always lower than the percentage change of equity except year 2014. This may explain why the debt-equity ratio kept decreasing except year 2014.

C) Interest coverage ratio

Chart 4.16 Interest coverage ratio



Unlike the normal construction company, the interest coverage ratio is not an appropriate standard to judge the ability of bank because the interest expense is quite high.

4.4.4 Operating performance ratio

Considering the specific of bank, we use only fixed asset turnover in this chapter.

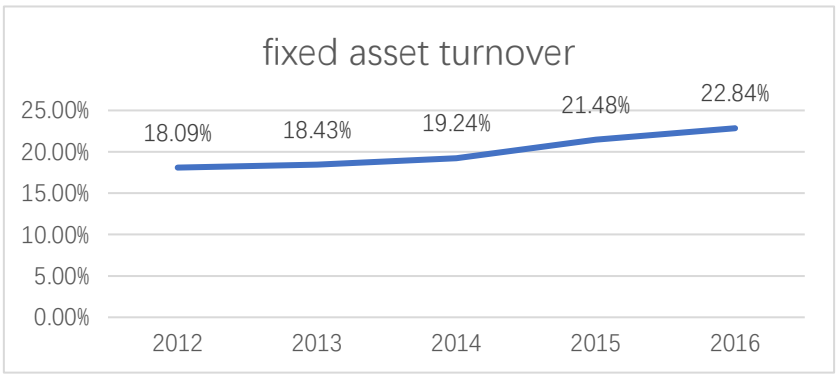
A) Fixed asset turnover

Table 4.22 PP&E and revenue of BNP Paribas

	2012	2013	2014	2015	2016
PP&E	17319	16929	18032	21593	22523
revenue	95733	91852	93728	100544	98591

Then we can calculate the fixed asset turnover.

Chart 4.17 Fixed asset turnover from 2012 to 2016.



As a bank, the PP&E is not the most important part but still necessary. The we do horizontal analysis.

Table 4.23 Horizontal analysis of PP&E and revenue

	2012	2013	2014	2015	2016
PP&E	100.00%	97.75%	104.12%	124.68%	130.05%
revenue	100.00%	95.95%	97.91%	105.03%	102.99%

From this we can see that in 2013 both elements decreased but revenue decreased more than PP&E, so the fixed asset turnover increased in 2013. From then on, BNP Paribas paid lot of attention on the PP&E, the value had been increasing from 2014 to 2016, which makes the fixed asset turnover increased too.

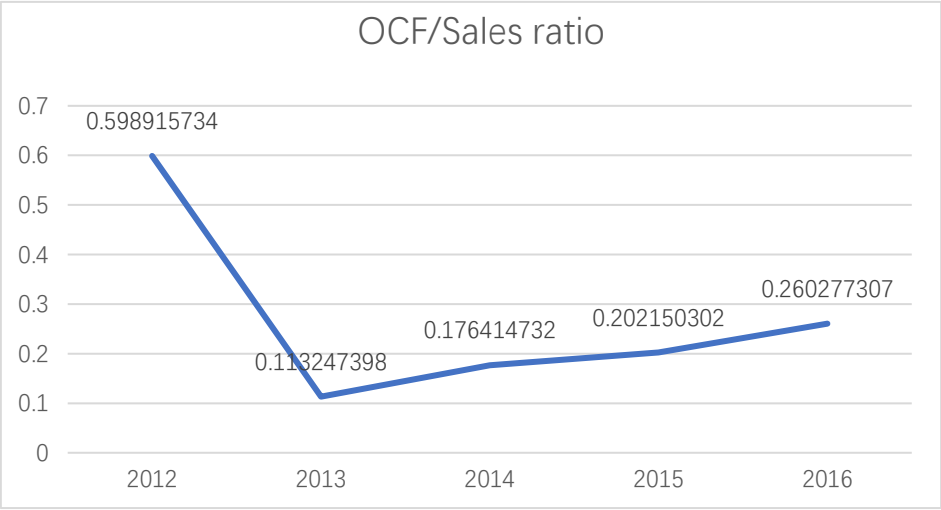
4.4.5 Cash flow indicator ratio

A) Operating cash flow/ sale ratio

Table 4.24 Operating cash flow and revenue

	2012	2013	2014	2015	2016
Operating cash flow	57336	10402	16535	20325	25661
revenue	95733	91852	93728	100544	98591

Chart 4.18 OCF/Sales ratio



From the chart we can know that the ratio decreased a lot in 2013 but since then it

kept increasing in 3 years. The reason is the intense decreasing of operating cash flow in 2012.

B) Cash flow coverage ratio

Because the characteristics of bank we only calculate capital expenditure coverage and dividend coverage.

Table 4.25 Data will be used in calculation

	2012	2013	2014	2015	2016
Operating cash flow	57336	10402	16535	20325	25661
capital expenditure	3663	3419	3442	3764	4444
cash dividends	543	2241	1715	645	1834

So, we can calculate the two ratios with the formula provided before.

Chart 4.19 Capital expenditure coverage

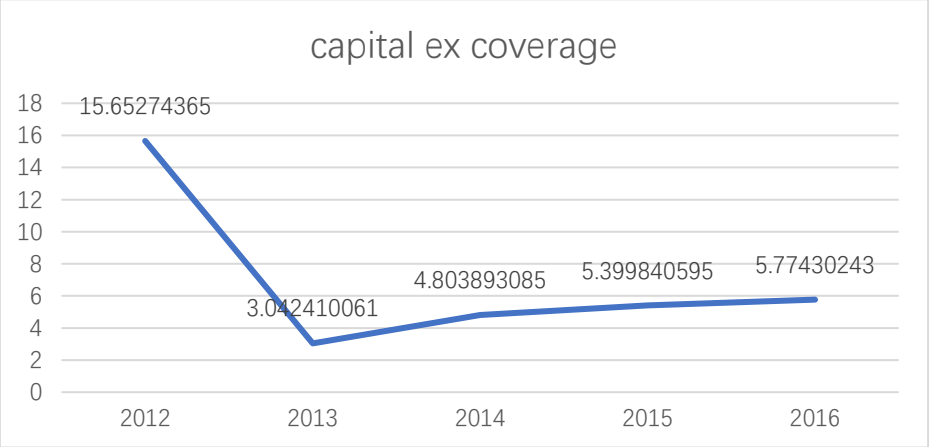
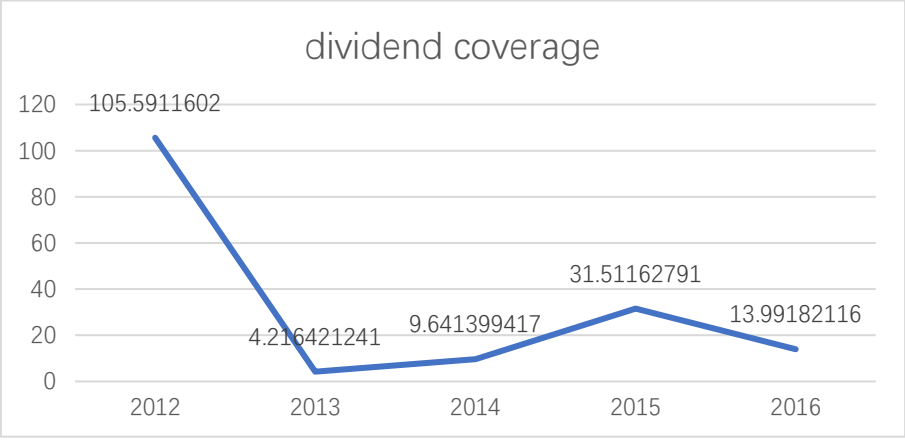


Chart 4.20 Dividend coverage



From this, we can know that both two ratios gone through the same change. First, ratios drop greatly in 2013, because the operating cash flow in 2012 was too high

and decreased a lot in 2013. Then in following years, these two ratios both increased.

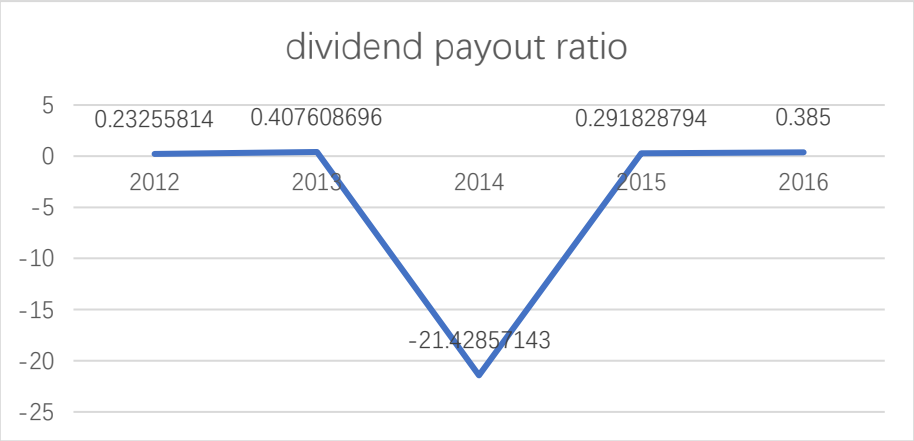
C) Dividend payout ratio

First, we will check the DPS and EPS from 2012 to 2016

Table 4.26 EPS and DPS from 2012 to 2016

	2012	2013	2014	2015	2016
Dividend per share	1.20	1.50	1.50	1.50	2.31
Earning per share	5.16	3.68	-0.07	5.14	6.00

Chart 4.21 dividend payout ratio of the company



The interest thing is that the EPS in 2014 is negative number, which means that the company didn't make profit that year. The ratio increased in following years except 2015, because while the EPS increased, DPS didn't change in that year.

4.5 DuPont analysis

After calculating so many ratios, we can use DuPont analysis to check the influence of one ratio to another.

Table 4.27 DuPont analysis

			2012	2013	2014	2015	2016
tax effect	1-(Tax/Income before tax)	(1)	0.705071	0.664184	0.161003	0.678678	0.723907
effect of non-operating items	Income before taxes/Operating income	(2)	1.208717	1.045582	1.072182	1.060488	1.040758
operating profit margin	Operating income/Revenue	(3)	0.089635	0.085268	0.031335	0.097340	0.109249
net profit margin	Net income/Revenue	(4)=(1)X(2)X(3)	0.076390	0.059215	0.005409	0.070059	0.082310
total asset turnover	Revenue/Average total asset	(5)	0.050193	0.050732	0.045110	0.050418	0.047469
return on asset	Net income/Average total asset	(6)=(4)X(5)	0.3834%	0.3004%	0.0244%	0.3532%	0.3907%
financial leverage	Average total asset/Average shareholder's equity	(7)	20.199636	19.905690	22.188561	19.926587	19.739204
return on equity	Net income/Average shareholder's equity	(8)=(6)X(7)	7.7450%	5.9799%	0.5414%	7.0386%	7.7124%

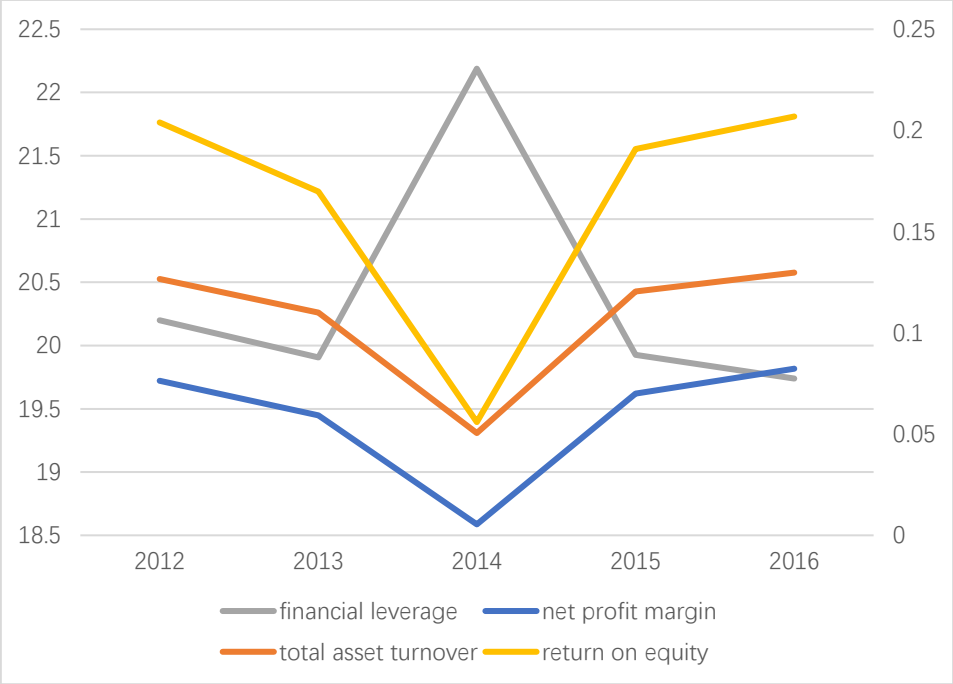
From this table, we can find that the return on asset had been decreasing from 2012 to 2014, especially in 2014 it decreased about 0.36%. Then we can compare net profit margin and total asset turnover, we can find that net profit margin also decreased a lot in 2014 about 0.0548. This means that the net income that year was extremely low. After 2014, the return on asset kept increasing majorly because the

increase in net profit margin. So even in 2016, while the total asset turnover decreased compared with 2015, the return on asset still increased in 2016.

Then we can focus on the net profit margin, From the table, we can know that in 2014, operating profit margin and tax effect both went through great drop. However, after checking the data in financial statements, we can find that the reasons why they dropped are the same: the extremely high decrease of operating income in 2014 resulted from the 'settlement expenses'.

Then we put the components of ROE into one chart and check the connection between them.

Chart 4.22 Analysis of ROE and component ratio



This chart is strange, because it looks like that the increase of financial leverage in 2014 leads to the decrease of ROE. However, if we check the data, we can find out that, the real reason why ROE in 2014 decrease is the decreasing of net profit margin. The decrease is so hurtful that the ROE in 2014 is the lowest even the financial leverage in 2014 is much higher than other years. But after 2014, everything looks like fine and normal. So it is the problem of governmental policy and we can provide no advice.

4.6 Influence quantification

After the DuPont analysis, we know that these ratios are connected with each other. In this chapter, we will use influence quantification to understand more about the connection between them.

Then, we can check the change of ROE in this 5 years.

Table 4.28 Change of ROE from 2012 to 2016

	2012	2013	2014	2015	2016
return on equity	7.745%	5.980%	0.541%	7.039%	7.712%
absolute change		-1.765%	-5.438%	6.497%	0.674%
index of change		0.7721	0.0905	13.0000	1.0957

This table has showed the absolute change (ROE_2-ROE_1) and index of change (ROE_2/ROE_1) of ROE. We can see that the ROE had changed a lot during this period. Then we will use the method of gradual change and logarithmic method to analysis the component ratios' influence on ROE. Like the last chapter, we divide ROE into three parts: a_1=net profit margin, a_2=total asset turnover, a_3=financial leverage.

A) Method of gradual change

2012 to 2013

Table 4.29 Method of gradual change from 2012 to 2013

	a2012	a2013	△a	△Xai	Order of influence
a1=net profit margin	0.0764	0.0592	-0.0172	-1.7413%	1
a2=total asset turnover	0.0502	0.0507	0.0005	0.0645%	3
a3=financial leverage	20.1996	19.9057	-0.2939	-0.0883%	2
sum	x	x	x	-1.7651%	x

This table showed the influence of three components on the ROE in 2012 and 2013. From which we can find that net profit margin had the most influence about 1.74% on ROE change, which was much more than other two ratios.

2013 to 2014

Table 4.30 Method of gradual change from 2013 to 2014

	a2013	a2014	△a	△Xai	Order of influence
a1=net profit margin	0.0592	0.0054	-0.0538	-5.4336%	1
a2=total asset turnover	0.0507	0.0451	-0.0056	-0.0605%	2
a3=financial leverage	19.9057	22.1886	2.2829	0.0557%	3
sum	x	x	x	-5.4385%	x

Table 4.30 shows that net profit margin has the most influence on ROE change about 5.43%. This number is also too much more than other two ratios.

2014 to 2015

Table 4.31 Method of gradual change from 2014 to 2015

	a2014	a2015	△a	△Xai	Order of influence
a1=net profit margin	0.0054	0.0701	0.0646	6.4710%	1
a2=total asset turnover	0.0451	0.0504	0.0053	0.8252%	2
a3=financial leverage	22.1886	19.9266	-2.2620	-0.7990%	3
sum	x	x	x	6.4972%	x

2015 to 2016

Table 4.32 Method of gradual change from 2015 to 2016

	a2015	a2016	△a	△Xai	Order of influence
a1=net profit margin	0.0701	0.0823	0.0123	1.2308%	1
a2=total asset turnover	0.0504	0.0475	-0.0029	-0.4838%	2
a3=financial leverage	19.9266	19.7392	-0.1874	-0.0732%	3
sum	x	x	x	0.6738%	x

These two tables are just like the two before, which all indicate the fact that a_1, which means net profit margin, has been the component ratio which has the most influence on ROE. This analysis has proved the conclusion in chapter 4.3 DuPont

analysis.

B) Logarithmic method

In this part, we will use the logarithmic method to analysis the influence of component ratio each year.

Table 4.33 Logarithmic method from 2012 to 2013

	a2012	a2013	Ia	△Xai	Order of influence
a1=net profit margin	0.0764	0.0592	0.7752	-1.7380%	1
a2=total asset turnover	0.0502	0.0507	1.0107	0.0729%	3
a3=financial leverage	20.1996	19.9057	0.9854	-0.1000%	2
sum	x	x	x	-1.7651%	x

Table 4.34 Logarithmic method from 2013 to 2014

	a2013	a2014	Ia	△Xai	Order of influence
a1=net profit margin	0.0592	0.0054	0.0913	-0.0542	1
a2=total asset turnover	0.0507	0.0451	0.8892	-0.0027	2
a3=financial leverage	19.9057	22.1886	1.1147	0.0025	3
sum	x	x	x	-0.0544	x

Table 4.35 Logarithmic method from 2014 to 2015

	a2014	a2015	Ia	△Xai	Order of influence
a1=net profit margin	0.0054	0.0701	12.95	0.064877	1
a2=total asset turnover	0.0451	0.0504	1.118	0.002818	2
a3=financial leverage	22.189	19.927	0.898	-0.00272	3
sum	x	x	x	0.064972	x

Table 4.36 Logarithmic method from 2015 to 2016

	a2015	a2016	Ia	△Xai	Order of influence
a1=net profit margin	0.0701	0.0823	1.17487	0.0119	1
a2=total asset turnover	0.0504	0.0475	0.9415	-0.0044	2
a3=financial leverage	19.9266	19.7392	0.9906	-0.0007	3
sum	x	x	x	0.0067	x

These four tables show the influence of three component ratio on basic ratio ROE in the logarithmic method, the result looks like the same: a_1, which represents net profit margin, becomes the component ratio which has the most influence on ROE. This conclusion is same with part A.

5. Conclusion

As a large international bank in the world, BNP Paribas was quite stable in operating and had also growth in profit. In common-size analysis, we find out that the company had very stable situation, the percentage every element takes part in financial statements didn't change a lot. In horizontal common-size analysis, we get to know that the company is growing stably in this 5 years. Although the increase in revenue is not so high (about 3%), the operating income increased a lot in 2016 (over 10%). In specific ratios analysis, we can know that the business scale of BNP Paribas has been expanding in these 5 years and the way it operates is quite aggressive. However, this has also showed the confidence of the company and its ambition. In profitability indicator ratio analysis, we can know that the gross profit, operating profit, pre-tax income and income all have increased compared with 2012 in 2015 and 2016. In 2013, there was a decrease in all ratios. However, in this part we find the number in 2014 was extremely low: operating profit margin, pre-tax income margin and net income margin, which resulted by the government settlement expenses that year (which is concluded in cost of risk). This is also showed in the calculating of ROA, ROE and ROCE. There is great drop in 2014 in the chart of these three ratios (Chart 4.9, 4.10 and 4.11). Besides, these three ratios seem to decrease in 2013 too. Then we calculate the debt ratio, debt-equity ratio and interest coverage ratio. The debt ratio and debt-equity decreased in general, which means the liabilities has less and less impact on the company. But the ratios in 2014 is higher, because the percentage increase of equity and asset is lower than the increase of liabilities that year. Then we know the fixed asset turnover has kept increasing in 5 years, which means the investment in fixed assets is quite useful. After a great fall in 2013, the OCF/sale ratio and capital coverage ratio kept increasing from 2013 to 2016, because the operating cash flow in 2012 was quite higher than other years. Dividend payout ratio was negative in 2014, because the net income was too low. So, we can know that the operating situation of BNP

Paribas was good in this 5 years except 2013 and 2014. In 2013, there was a little decrease in net income but in 2014 it became a great drop.

As for DuPont analysis and influence quantification, we analysis the connection between these ratios and influence made by one ratio to another. We find out that net profit margin was a key component ratio to the basic ratio ROE.

So, we can draw a conclusion that BNP Paribas is operating stably and at the same time expanding its business scale. BNP Paribas is one of the most famous banks in the world. As we can acknowledge from the thesis, the managing and operating is quite stable. The growth of loan and deposit showed the trust of customers to this company. The decreasing in non-performing loan is also the symbol that BNP Paribas is improving the credit quality.

What needs to be emphasized is that, the cost of settlement with US government in 2014 is the penalties paid by BNP Paribas for two criminal charges and resolving accusations it violated U.S. sanctions against Sudan, Cuba and Iran, this is a severe punishment aimed at sending a clear message to other financial institutions around the world. This is also showed in chapter 3. What impressed me is that, even the penalty of 6 billion euros is even more than the net income of 5.4 billion euros in 2013. After the shock and damage like this, BNP Paribas can still make a great influence in the world. This has showed the power and ability of this great company. So, I have the reason to believe that BNP Paribas can improve better and better and have a great future.

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List of Abbreviations

EAT	Earning after Tax
EBIT	Earning before Interest and Tax
EBT	Earning before Tax
FRA	Forward Rate Agreement
FX	Foreign Exchange
IRS	Internal Revenue Service
MFI	Monetary Financial Institutions
OIS	Overnight Indexed Swap
OCF	Operating Cash Flow
ROA	Return on Assets
ROCE	Return on Capital Employed
ROE	Return on Equity
ST	Short-term
Xccy	Cross-currency

Declaration of Utilization of Results from the Bachelor Thesis

Herewith I declare that

- I am informed that Act No. 121/2000 Coll. – the Copyright Act, in particular, Section 35 – Utilization of the Work as a Part of Civil and Religious Ceremonies, as a Part of School Performances and the Utilization of a School Work – and Section 60 – School Work, fully applies to my diploma (bachelor) thesis;
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Ostrava dated 11.05.2018

Zeyu Liu

Student's name and surname

List of Annexes

Annexes

Annexes 1

Balance Sheet (in millions of euros)

Periods ending		31.12.2012	31.12.2013	31.12.2014	31.12.2015	31.12.2016
Assets						
	Cash and amount due from central banks	103190	100787	117473	134547	160400
Financial instruments through profit or loss						
	Trading securities	143465	157735	156546	133500	123679
	loans and repurchase agreements	146899	152036	165776	131783	152242
	Instruments designated at fair value through profit or loss	62800	68185	78827	83076	87644
	Deriavative financial instruments	410635	305755	412498	336624	328162
	Deriavatives used for hedging purposes	14267	8368	19766	18063	18133
	Available-for-sale financial assets	192506	199056	252292	258933	267559
	Loans and recevables due from credit institutions	40406	57545	43348	43427	47411
	Loans and recevables due from customers	630520	612455	657403	682497	712233
	Remeasurement adjustment on interest-rate risk hedged portfolios	5836	3568	5603	4555	4664
	Held-to-maturity financial assets	10284	9881	8965	7757	6100
	Current and deferred tax assets	8661	8850	8629	7865	7966
	Accured income and other assets	99359	88656	110088	108018	115967
	Equity-method investments	7040	6561	7371	6896	6910
	Investment property	927	1772	1614	1639	1911
	Property, plant and equipment	17319	16929	18032	21593	22523
	Intangible assets	2585	2537	2951	3104	3239
	Goodwill	10591	9846	10577	10316	10216
Total assets		1907290	1810522	2077759	1994193	2076959

Period ending		31.12.2012	31.12.2013	31.12.2014	31.12.2015	31.12.2016
Liabilities						
	Due to central banks	1532	662	1680	2385	233
Financial instruments at fair value through profit or loss						
	Trading securities	52432	69792	78912	82544	70326
	Borrowings and repurchase agreements	203063	202662	196733	156771	183206
	Instruments designated at fair value through profit or loss	43530	47342	57632	53118	54076
	Derivative financial instruments	404598	301439	410250	325828	318740
	Derivatives used for hedging purposes	17286	12139	22993	21068	19626
	Due to credit institutiobs	111735	84594	90352	84146	75660
	Due to customers	539513	553497	641549	700309	765953
	Debt securities	173198	186686	187074	159447	153422
	Remeasurement adjustment on interest-rate risk hedged portfolios	2067	924	4765	3946	4202
	Current and deferred tax liabilities	3046	2477	2893	2993	3087
	Accrued expenses and other liabilities	86691	78381	87798	88629	99407
	Technical reserves of insurance companies	147992	155226	175214	185043	193626
	Provisions for contingencies and charges	10962	11922	12337	11345	11801
	Subordinated debt	15223	11824	13936	16544	18374
Total liabilities		1813692	1719567	1984118	1894116	1971739

Period ending		31.12.2012	31.12.2013	31.12.2014	31.12.2015	31.12.2016
Shareholder's equity						
	Share capital, additional paid-in capital and retained earnings	76102	80672	83162	82839	86794
	Net income for the period attributable to shareholders	6553	4818	157	6694	7702
Total capital, retained		82655	85490	83319	89533	94496
Change in asset and		3231	1943	6091	6736	6169
Shareholder's equity		85886	87433	89410	96269	100665
	Retained earnings and net income for the period attributable to minority interests	8124	3528	4097	3691	4460
	Change in asset and liabilities recognised directly in equity	412	-6	134	117	95
Total minority interests		8536	3522	4231	3808	4555
Total consolidated equity		94422	90955	93641	100077	105220
Total liabilities and consolidated equity		1907290	1810522	2077759	1994193	2076959

Annex 2

Income Statement (in millions of euros)

Period ending	31.12.2012	31.12.2013	31.12.2014	31.12.2015	31.12.2016
Interest income	44476	38955	38707	41381	40894
Commission income	12601	12301	12661	13335	12765
Income from other activities	33720	34350	35760	38289	36532
Net gain on financial instruments at fair value through profit or loss	3312	4581	4631	6054	6189
Net gain on available-for-sale financial assets and other financial assets not measured at fair value	1624	1665	1969	1485	2211
Interest expense	22731	18359	18388	18828	18518
Commission expense	5069	5123	5273	5720	5563
Expense on other activities	28861	29548	30899	33058	31099
Gross Profit	39072	38822	39168	42938	43411
Operating expense(Include salary)	25007	24556	24960	27600	27681
Depreciation, amortisation and impairment of property, plant, equipment and intangible assets	1543	1582	1566	1654	1697
Gross operating Income	12522	12684	12642	13684	14033
Cost of risk	3941	4054	9705	3897	3262
Costs of settlement with US government	0	798	6000	100	0
Operating Income	8581	7832	2937	9787	10771
Share of earnings of associate	489	323	408	589	633
Net gain on non-current asset	1792	285	155	996	12
Good will	490	251	351	993	182
Pre-tax income	10372	8189	3149	10379	11210
corporate income tax	3059	2750	2642	3335	3095
Net income	7313	5439	507	7044	8115
Net income attributed to minority interests	760	607	350	350	413
Net income attributed to equity holders	6553	4832	157	6694	7702
Basic earning per share	5.16	3.69	-0.07	5.14	6

Annex 3

Cash Flow Statement (in millions of euros)

Period ending; in millions of euros	2012	2013	2014	2015	2016
Pre-tax income	10372	8189	3149	10379	11210
Non-monetary items included in pre-tax net income and other adjustments	8540	9389	9398	18354	12474
Net depreciation/amortisation expense on property, plant and equipment and intangible assets	3663	3490	3442	3764	4444
Impairment of goodwill and other non-current asset	493	167	361	989	155
Net addition to provisions	7004	10908	12385	12662	10241
Share of earnings of associates	-489	-323	-408	-589	-633
Net income(expense) from investing activities	-1783	86	47	-889	56
Net expense (income) from financing activities	217	-90	40	2545	1232
Other movements	-565	-4849	-6469	-128	-3021
Net increase/decrease in cash related to assets and liabilities generated by operating activities	38424	-7176	3988	-8408	1977
Net increase/decrease in cash related to transactions with credit institutions	-22052	-33538	10875	-7121	-19515
Net increase/decrease in cash related to transactions with customers	47028	44366	46407	-1780	25749
Net increase/decrease in cash related to transactions involving other financial assets and liabilities	17890	-13004	-48000	7021	3045
Net decrease in cash related to transactions involving non-financial assets and liabilities	-2455	-2135	-2911	-4153	-5163
Tax paid	-1987	-2865	-2383	-2375	-2139
Net increase in cash and equivalents generated by operating activities	57336	10402	16535	20325	25661

		2012	2013	2014	2015	2016
	Net increase/decrease in cash related to transactions with credit institutions	-22052	-33538	10875	-7121	-19515
	Net increase/decrease in cash related to transactions with customers	47028	44366	46407	-1780	25749
	Net increase/decrease in cash related to transactions involving other financial assets and liabilities	17890	-13004	-48000	7021	3045
	Net decrease in cash related to transactions involving non-financial assets and liabilities	-2455	-2135	-2911	-4153	-5163
	Tax paid	-1987	-2865	-2383	-2375	-2139
Net increase in cash and equivalents generated by operating activities		57336	10402	16535	20325	25661
	Net increase/decrease in cash related to acqisitions and disposals of consolidated entities	2911	-482	-1331	150	468
	Net decrease related to property, plant and equipment and intangible assets	-1631	-1501	-1727	-1756	-1485
Net increase/decrease in cash and equivalents related to investing activities		1280	-1983	-3058	-1606	-1017
	Increase/decrease in cash and equivalents related to transactions with shareholders	543	-2234	-1715	-645	-1834
	Decrease in cash and equivalents generated by other financing activities	-8246	-3506	-2126	-5069	-2608
Net decrease in cash and equivalents related to financing activities		-7703	-5740	-3841	-5714	-4442
Effect of movement in exchange rates on cash and equivalent		-1035	-4776	4600	8176	2587
Net increase/decrease in cash and equivalents generated by operating activities		49878	-2097	14236	21181	22789

Annex 4

Post-due Loans (in millions of euros)

	2012					
In millions of euros	<90days	90-180days	180days-1year	>1year	Total	Collateral received
Loans and receivables due from credit institutions	105	20			125	49
Loans and receivables due from customers	15709	604	45	79	16437	9734
Total post-due but not impaired loans	15814	624	45	79	16562	9783
	2013					
In millions of euros	<90days	90-180days	180days-1year	>1year	Total	Collateral received
Loans and receivables due from credit institutions	274			20	294	65
Loans and receivables due from customers	12651	282	68	70	13071	7362
Total post-due but not impaired loans	12925	282	68	90	13365	7427
	2014					
In millions of euros	<90days	90-180days	180days-1year	>1year	Total	Collateral received
Loans and receivables due from credit institutions	140				140	90
Loans and receivables due from customers	11643	326	66	217	12252	6048
Total post-due but not impaired loans	11783	326	66	217	12392	6138

	2015					
In millions of euros	<90days	90-180days	180days-1year	>1year	Total	Collateral received
Loans and receivables due from credit institutions	168				168	315
Loans and receivables due from customers	13960	395	211	136	14702	7793
Total post-due but not impaired loans	14128	395	211	136	14870	8108
	2016					
In millions of euros	<90days	90-180days	180days-1year	>1year	Total	Collateral received
Loans and receivables due from credit institutions	253	1		1	255	42
Loans and receivables due from customers	11271	296	166	333	12066	5809
Total post-due but not impaired loans	11524	297	166	334	12321	5851

Annex 5

Doubtful loans (in millions of euros)

	2012		2013	
In millions of euros	Doubtful loans	Collateral received	Doubtful loans	Collateral received
Available-for-sale financial assets	49		52	
Loans and receivables due from credit institutions	487	318	390	288
Loans and receivables due from	20240	11429	22592	13706
Doubtful assets	20776	11747	23034	13994
Financing commitments given	739	72	584	149
Gurantee commitments given	720	376	828	295
Off-balance sheet doubtful commitments	1459	448	1412	444
Total	22235	12195	24446	14438

	2014		2015	
In millions of euros	Doubtful loans	Collateral received	Doubtful loans	Collateral received
Available-for-sale financial assets	116		56	
Loans and receivables due from credit institutions	209	109	152	303
Loans and receivables due from customers	20134	13190	18521	11814
Doubtful assets	20459	13299	18729	12117
Financing commitments given	429	321	587	515
Gurantee commitments given	796		717	
Off-balance sheet doubtful commitments	1225	321	1304	515
Total	21684	13620	20033	12632

	2016	
In millions of euros	Doubtful loans	Collateral received
Available-for-sale financial assets	21	
Loans and receivables due from credit institutions	107	351
Loans and receivables due from customers	17855	11981
Doubtful assets	17983	12332
Financing commitments given	1026	1058
Gurantee commitments given	1025	
Off-balance sheet doubtful commitments	2051	1058
Total	20034	13390